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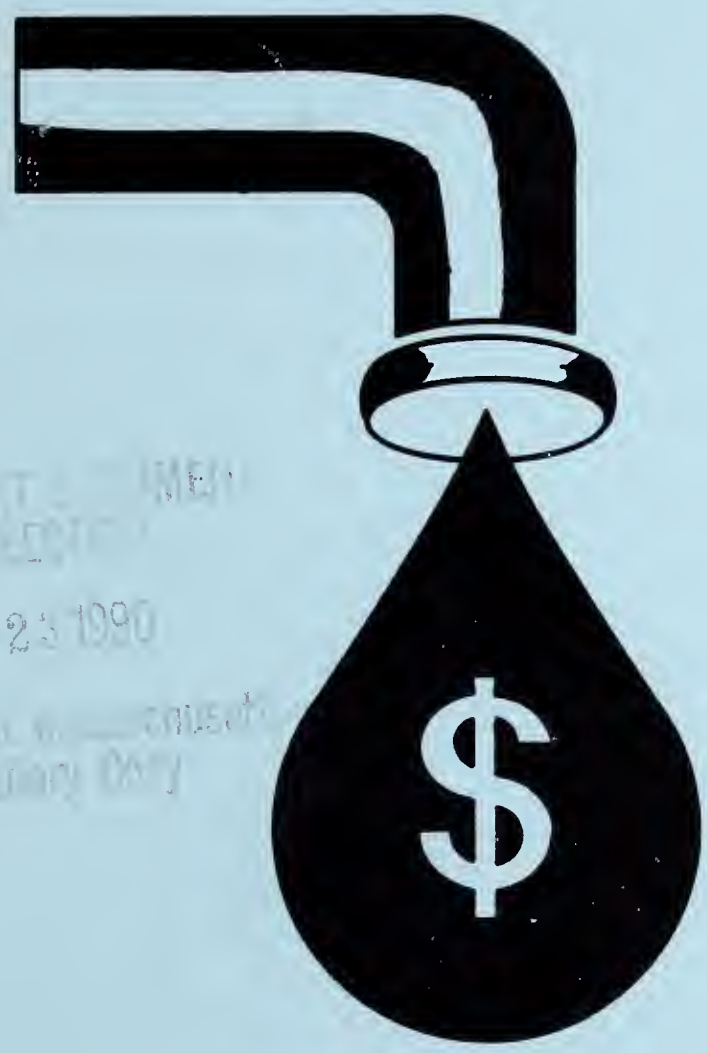
MASSACHUSETTS • WATER RESOURCES COMMISSION

WATER: WHAT PRICE DO WE PAY?



A SURVEY OF WATER AND SEWER RATES IN MASSACHUSETTS

Prepared by
Massachusetts Department of Environmental Management
Division of Water Resources
February 1989

for the
Massachusetts Water Resources Commission

Michael S. Dukakis, Governor John P. DeVillars, Secretary James Gutensohn, Commissioner

The Commonwealth of Massachusetts

Water Resources Commission

Leverett Saltonstall Building, Government Center

100 Cambridge Street, Boston 02202

February 13, 1989

Dear Reader:

The need for a good, clean water supply and a properly functioning wastewater removal and treatment system is a constant one. Meeting this need is becoming increasingly difficult due to more stringent federal drinking water and wastewater treatment standards, reductions in federal dollars, threats to existing sources, and pressures of increased demand on a finite natural resource. As a result, meeting these basic needs is becoming more costly. The question arises, what do we pay for protection and management of these valuable resources ? Water: What Price Do We Pay? answers that question and begins to raise new ones regarding the value of these resources and funds needed to ensure their viability for future generations.

It presents a picture of what Massachusetts residents paid for water and sewer service in 1988. Water and sewer rates vary widely across the state. This survey found that the highest rates (water and sewer combined) resulted in a yearly cost of $646 per household and the lowest resulted in a cost of $60 a year per household. The average cost per household in 1988 was $276 a year for water and sewer service. This equates to approximately 75 cents per day for a household of four.

The report was prepared by Jonathan Yeo, Water Resources Planner for the Department of Environmental Management, Division of Water Resources, with input from Allen Adelman, Water Program Liaison for the Massachusetts Water Resources Authority Advisory Board, Tara Gallagher, Water Quality Planner for the Department of Environmental Quality Engineering, Division of Water Supply, and Trish Garrigan, Principal Planner for the Water Resources Commission.

One of the best means for promoting water conservation is to price water based on the cost of providing it. It is also important to design equitable rate structures that encourage conservation. These actions will help ensure an adequate and affordable supply of clean water for the future. This report explores these issues in a useful way. I recommend it.

Sincerely,

John P. DeVillars, Secretary
Executive Office of Environmental Affairs

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Approved By: Ric Murphy, State Purchasing Agent

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INTRODUCTION

The purpose of this report is to survey a large representative sample of public water supply and sewer agencies in Massachusetts to record the rates directly charged the consumer and to estimate the annual water water and sewer bill and average price for a four person household.

This report includes the results of a survey of 203 of the Massachusetts communities supplied with public water and sewer services. The people served by these systems represent over 80 percent of the population served by public water in the state. The report answers such questions as:

- What are the water and sewer rates for these communities?
- How much did the average four person household served by a public water and sewer agency in Massachusetts get billed for water and sewer service in 1988?
- How large are the cost differences between communities and how are they distributed around the state?
- How are communities designing their rate structures for water and sewer service?
- How do private water companies compare in pricing to public water agencies?

The difficulty in developing the answers to these questions is compounded in this state because of the large number, independence, and variation in public water and sewer agencies. Since each agency can charge different rates for water or sewer service and design their rate structures differently, this report estimates the annual bills paid by the household in each community and then calculates an average price per 100 cubic feet (hcf) consumed.

There are approximately 500 public water supply systems (those serving more than 25 people) in Massachusetts providing water to more than 5.4 million individuals representing about 93 percent of the state's population. The public water supply systems range in size from the Boston Water and Sewer Commission serving about 575,000 people to small systems serving just over 25 individuals or vacation communities consisting of a few homes occupied during the summer season.

The public water and sewer systems operate under different administrative structures. In the larger communities, water and sewer services are provided by the Water and/or Sewer Department, a unit of the Department of Public Works or the municipal government. In this case, the municipal government establishes the water and sewer rates. In other communities, the water and sewer department reports directly to a Water and Sewer Commission. The departments operate separately from the local government and the members of the commission are elected directly by the citizens of the community. The commission sets the water and sewer rates.

In more rural communities, Fire and Water Districts have been established by the Legislature to provide services in a certain area usually within one municipality. The districts are governed by a board elected by the individuals living within the district's boundaries. The boards set the rates and can sometimes assess a tax on the property owners.

The last administrative structure is the private water supply companies which operate under the regulation of the Massachusetts Department of Public Utilities (DPU). In this case, the DPU ultimately approves the rates of the individual companies.

Some of the public water and sewer agencies raise all of the needed costs to operate their system through direct billings to the consumers. Other communities use a combination of direct billings and funds from the general tax revenues to operate their water and sewer systems. As you examine this report keep in mind that no single rate or rate structure is best for all communities. The rate which is most appropriate depends on policy objectives and local conditions that affect the

cost of providing water and sewer service. While this report does not address the question of what rate and which rate structure is appropriate for each community, it does provide an informational background.

It is necessary to distinguish two components of water rates: the rate level and the rate structure. The rate structure refers to a method of charging for water based on such factors as the quantity used during the billing period, the size of the connection, and the time of use. The rate structures used in Massachusetts include: decreasing block; flat; increasing block; seasonal; and flat fee.

Under a decreasing block rate structure, customers usually pay a minimum charge and are entitled to use a specific amount of water at no additional cost. Water use above this specified amount is divided into rate blocks. Each consecutive block of water used is priced at a lower rate per unit, either per 100 cubic feet ("hcf") or 1,000 gallons. This type of rate structure does not encourage water conservation. A flat rate structure simply charges a constant rate per unit of water for all levels of water consumption. Communities with flat rates often have a minimum charge that covers a small amount of water use. In the increasing block structure, each succeeding block of water used is priced at a higher rate per unit than the previous block. This type of rate structure can be used by communities to encourage conservation. Seasonal or peak rates provide for higher charges for water during periods of peak demand such as the summer months.

The rate level refers to the actual price charged for a given volume of water. While rate structure and rate level are, in theory, independent of each other, often they are considered together in the rate setting process. Many communities subsidize their water and sewer operations with other revenue sources, such as propery taxes, and the consumer is not directly billed for the full cost of the water and sewer services. More and more communities are turning to full cost pricing as a means of recovering the full cost of providing water services and encouraging conservation.

How much the average Massachusetts household pays for water and sewer service varies greatly. The range of annual bills for the same volume of water is from $36 per year to $480 per year (over a 13 fold difference) and for the same volume of wastewater discharge into the sewer the annual bills range from $0 to $441 per year.

The figures given in this report are representative of what the average four person household is billed directly for water and sewer service. They do not reflect actual water and sewer bills for specific households in the communities surveyed. Both water and sewer rates are examined in this survey since they together represent the total price a consumer pays directly for utilizing the water resource. Water rates and yearly bills for commercial and industrial users can be calculated by using Tables A-1, 2, and 3.

Chapter One discusses water rates and rate structures, Chapter Two discusses sewer rates and rate structures, and Chapter Three discusses water and sewer rates combined. Each chapter includes a description of the methodology used with examples and a summary of results. The tables containing the detailed rate and rate structure information are placed after the text of the chapters.

CHAPTER 1. PUBLIC WATER RATES AND RATE STRUCTURES

The 209 public and private water suppliers included in this survey serve approximately 4.5 million people in 203 cities and towns, which accounts for about 81 percent of the people connected to public water supply systems in Massachusetts. Several of the communities are served by multiple water systems. The water suppliers for the remaining 19 percent were not surveyed due to difficulty in reaching officials. While public and private water supply systems serve about 93 percent of the state's total population, the remaining seven percent utilize on-site private wells for water supply. The costs associated with private wells are not covered in this study.

Methodology

Most of the water rate information included in this survey was collected by telephone interviews with public water departments and districts during November and December, 1988. Rates for communities served by the Massachusetts Water Resources Authority (MWRA) were collected in late 1988 by the MWRA Advisory Board staff. Rates for the 35 surveyed private water companies were collected by reviewing documents submitted to the Massachusetts Department of Public Utilities.

Water rate structures vary from community to community, making comparisions of prices and yearly bills for water service difficult. This study uses the water rate information collected in the survey to estimate a yearly water bill for a four person household using 1,000 cubic feet (c.f.) per month, or 12,000 c.f. per year. The 1,000 c.f. per month usage, which is about 61 gallons per person per day, is a commonly used figure for an average residential household.

Since most public water and sewer agencies use cubic feet as the measurement of water use for billing purposes, all rate structures based on gallons were converted to cubic feet for better comparison.

The following three examples show the methods used to calculate the yearly residential water bill for water service to a hypothetical four person household using 1,000 c.f. per month (7,480 gal.), or 12,000 c.f. per year (89,760 gal.). The average price per 100 c.f. (written "hcf") is used to compare rates between communities of differing rate structures. It is calculated by dividing the yearly residential bill by 120 (hcf), which represents 12,000 c.f. in 120 units of 100 c.f..

Example 1. Flat Rate Structure for Water (Town of Nahant)

A. Billing Periods Per Year: 2. Assume 12,000 c.f/year divided by 2 = 6,000 c.f. or 60 (hcf).
B. Minimum Charge and Allotment: No minimum charge.
C. Rates: First Rate Block:
   Quantity: Covers all consumption
   Unit Cost: $2.10 per hcf
D. Yearly Residential Bill: 1. 60 (hcf) X $2.10/hcf = $126 per billing period
   2. $126 X 2 billings per year = $252 per year
E. Average Price Per hcf: $252/year divided by 120 (hcf) = **$2.10/hcf**
F. Average Price Per 1,000 gal.: $2.10/hcf X 1.337 (hcf/1,000 gal.) = $2.81/1,000 gal.
G. Rate Structure: F = Flat Rate Structure

Example 2. Flat Fee Structure for Water (City of Woburn)

A. Billing Periods Per Year: 2. Assume 12,000 c.f./year divided by 2 = 6,000 c.f. or 60 (hcf).
B. Maximum Charge and Allotment: Not applicable to this rate structure

C. Rates: Flat fee of $ 42 per billing period for water service to single family household with 5/8" line.
D. Yearly Residential Bill: 1. $42 flat fee per billing period
2. $42 X 2 billing periods per year = $84 per year
E. Average Price Per hcf: $84/year divided by 120 (hcf) = **$0.70/hcf**
F. Average Price Per 1,000 gal.: $0.70 / hcf X 1.337 (hcf/1,000 gal.) = $0.94/1,000 gal.
G. Rate Structure: NM = No Meters, flat fee charged for water service

Example 3. Increasing or Decreasing Rate Block Structure for Water (Town of Billerica)

A. Billing Periods Per Year: 3. Assume 12,000 c.f./year divided by 3 = 4,000 c.f. or 40 (hcf).
B. Maximum Charge and Allotment: $10.00 minimum charge per billing. No Allotment.
C. Rates:
First Rate Block:
Quantity: 0-20 (hcf)
Unit Cost: $0.78 / hcf
Second Rate Block:
Quantity: 20-100 (hcf)
Unit Cost: $0.98 / hcf
Third Rate Block:
Quantity: 100+ (hcf)
Unit Cost: $1.17 / hcf
D. Yearly Residential Bill:
1. $10 minimum charge per billing
2. Assume 40 (hcf) consumed per billing
3. First Rate Block: $0.78/hcf X 20 (hcf) = $15.60
4. Second Rate Block: $0.98/hcf X 20 (hcf) = $19.60
5. Total Cost Per Billing: $15.60 + $19.60 = $35.20 (this is above the minimum charge)
E. Average Price Per hcf: $105.60 divided by 120 (hcf) = **$0.88/hcf**
F. Average Price Per 1,000 gal.: $0.88 / hcf X 1.337 (hcf/1,000 gal.) = $1.18/1,000 gal.
G. Rate Structure: I - Increasing Rate Block Structure. Higher unit costs as consumption increases.

Summary of Results

Rates

Table A-1 (pages 20 - 27) displays the water rates for the 172 communities supplied by the 173 surveyed public water departments and districts in order from highest to lowest price, in both dollars per 100 cubic feet and dollars per 1,000 gallons. The Table also presents detailed information on the various rate blocks and rate structures. Tables A-2 (page 28) and A-3 (page 29) display the water rates and structures for the 35 surveyed private water companies supplying portions of 33 communities.

The average four person household in Massachusetts directly pays about $1.14/hcf or $1.53/ 1,000 gal. for public water. The average yearly water bill for this household is about $137. This figure for the entire state was calculated by using the service population to weight each community's average price. In other words, the price of water in Worcester, with a large population served by public water, is given a much larger weight in determining the state average than the price of water in the smaller community of Barre.

The $1.14/hcf average price and $137 yearly water bill is higher than the national average price of $1.00/hcf and yearly bill of $119.40 found by a 1988 Arthur Young National Water and Wastewater Rate Survey that used the same water use assumptions as used in this study.

The average price for the 35 surveyed private companies is $1.94/hcf, which is 70 percent higher than the public system average price.

Figure 1 shows the distribution of water prices in $0.10/hcf intervals between $0.30/hcf and $4.00/hcf. The unweighted average of the 178 prices found in the survey is $1.23/hcf, which shows that some low prices in the large cities lowered the weighted average down to $1.14/hcf.

The highest water prices in the surveyed communities served by public water suppliers were in the towns of Sandwich and Cohasset. The Sandwich Water District's price, which includes both a consumption charge and a property tax assessment specified for the district, is $3.58/hcf. This average price is based on a yearly bill of $430.10 for a household using 12,000 c.f./year with the average property value for a single family home in Sandwich of $163,500. Cohasset's yearly bill of $336, which is derived from a quarterly service charge of $18 and a rate charge of $2.20/hcf, creates a unit price of $2.80/hcf.

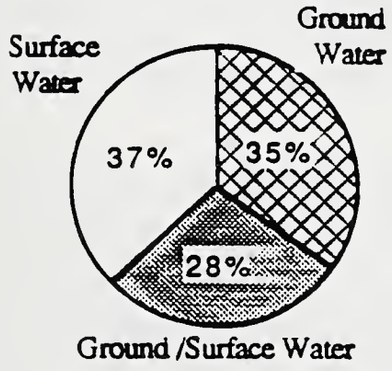
The highest water price charged by a surveyed private company is $3.99/hcf for the Dover Water Company in Dover. The company charges $90 per quarter plus $2.99/hcf for consumption at levels consistent with residential use.

The lowest water price in the surveyed communities is in North Attleboro, where the average price for the four person household is $0.36/hcf and the yearly bill is about $43.40.

The average prices for both public and private systems were categorized into three groups: the high range with prices over $1.50/hcf (30 percent); the medium range with prices between $1.00 and $1.50/hcf (38 percent); and the low range with prices below $1.00/hcf (32 percent). Figure 3 (page 8) is a map showing the statewide distribution of the communities in these categories. Most of the high range communities are in the eastern part of the state and are not served by the Massachusetts Water Resources Authority (MWRA).

Figure 4 (page 9) shows the water rate categories from Figure 3 and denotes whether the community's source is ground or surface water. A majority of the high range communities are supplied only by ground water. The mid range communities are spread across the state with many of the MWRA member communities falling into this category. The low range communities were also spread across the state, with concentrations in the Connecticut River basin and in older cities supplied by water from surface reservoirs. The following charts show how the high price range communities have a greater tendency to be supplied by ground water than the low price range communities.

LOW PRICE RANGE
Type of Water Supply



HIGH PRICE RANGE
Type of Water Supply

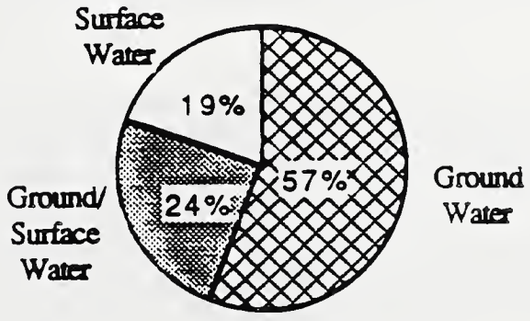
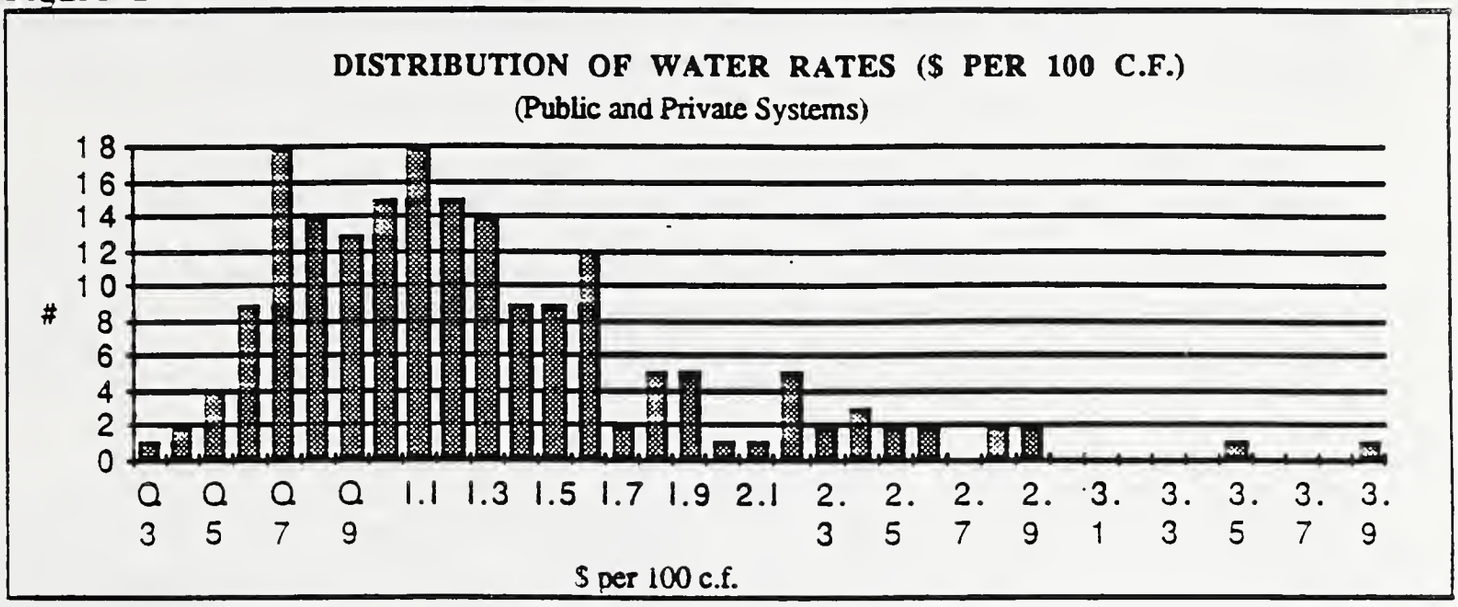


Figure 1 shows the distribution of water prices found in $0.10/hcf intervals between $0.30 and $4.00/hcf.

Figure 1



Rate Structures

There were four major rate structures found in the surveyed communities served by public water systems: flat rate; increasing block rate, decreasing block rate; and flat fee. The detailed information of each community's water rate structure is shown in Table A. Figure 3 is a map showing the distribution of water rate structures in the surveyed communities.

One hundred and seventeen of the surveyed communities, about 68 percent, fall into the flat rate category. Many of these communities have service charges or minimum charges for each billing period which cover a limited allowance of water before a flat rate begins for each hcf or 1,000 gal. consumed. The rate structures that give an allowance of water for a minimum charge per billing period are in effect charging a rate per hcf for the allowance amount. An example of this structure is in Sturbridge which bills quarterly, charging a minimum $15 and allowing 1,000 c.f. for this period. After 1,000 c.f. the price becomes $1.30/hcf The effective price of this first 1,000 c.f. is actually $1.50/hcf Other communities have lower prices implicit in their minimum charge-allowance system than their flat rate covering the remainder of water use.

The purpose of the water allowance is sometimes to keep prices low for small households, such as an elderly couple who use relatively little water, while others are designed to encourage conservation by the average household. The water use threshold at which the rate charges begin to take effect is one of the important factors in rate structure design since it determines the point where all users of the public water supply, including residential, commercial, and industrial users, begin to pay for actual consumption of water.

Twenty-five communities, or 14 percent, have increasing block rate structures that charge higher prices as water use increases during the billing period. This type of rate structure promotes water conservation. For example, Tewksbury charges $2.24/hcf for the first 150,000 gallons (20,050 c.f.) consumed every six months, and then $3.37/hcf thereafter. This $3.37/hcf rate, which is the highest consumptive water rate found in the survey for a public water supplier, is designed to only impact large commercial and industrial users. One variation of this rate structure is a seasonally based structure. Wellesley charges $1.10/hcf for eight months and $1.60/hcf during the four summer months in order to promote conservation.

Nineteen communities, or 11 percent, have decreasing block rates that charge lower prices as water use increases during the billing period. This structure is beneficial to large volume users, such as industries, since prices decrease as more water is consumed. This structure is the least efficient in terms of promoting conservation. For example, Lancaster charges $1.20/hcf for the first 1,000 c.f. per quarter, then $0.60 /hcf thereafter. The lowest rate block found in the survey was in Chicopee, where their seventh rate block for a quarterly billing period was only $0.08/hcf.

Ten communities surveyed did not have meters for residential users of public water. Residents of seven of those communities were charged a flat fee for water use and residents of three communities were charged a fee based on the number and type of their water using fixtures. Flat fees for water service do not promote conservation since the fees are not based on consumption. One of the more interesting charges associated with public water is in the Town of Hatfield, where each horse belonging to the customer cost an additional $5 per billing. Figure 2 displays the breakdown of water rate structures used by the communities.

Many of the 35 surveyed private companies servicing 33 communities use flat fees or decreasing block rate structures. Seventeen companies, which do not use water meters, charge either a flat fee or base charges on water fixtures. Nine companies have decreasing block rate structures and eight employ a flat rate structure. Only one company surveyed uses an increasing block rate structure.

Figure 2

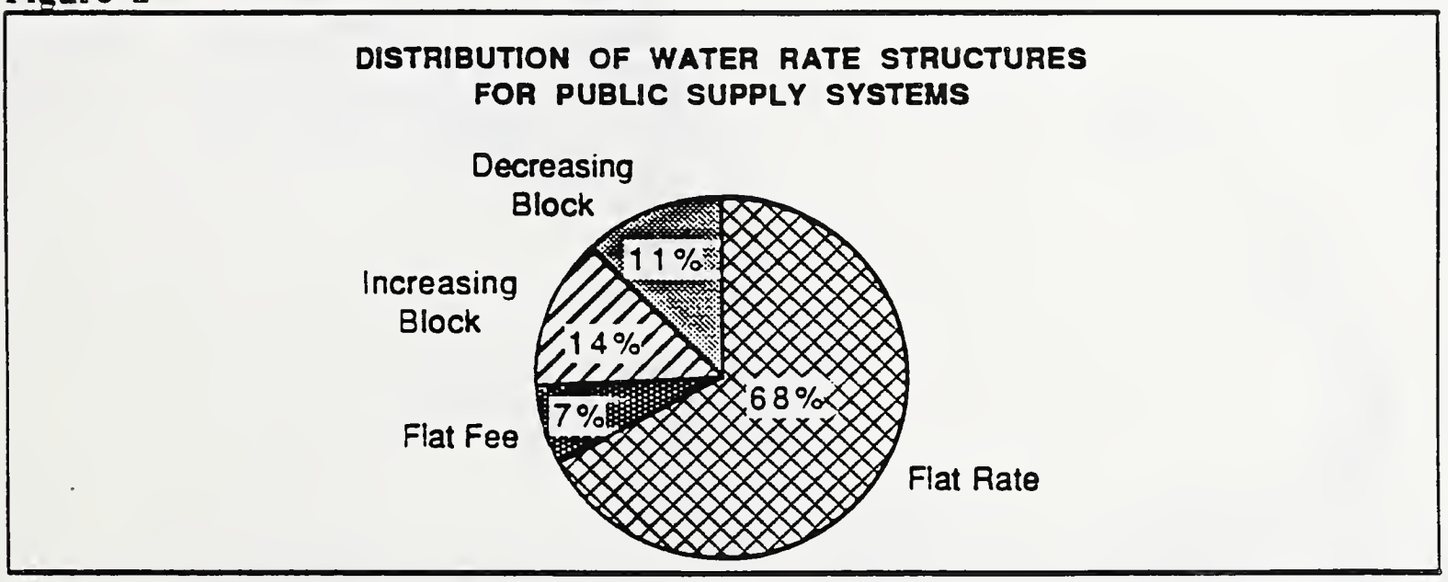


Figure 5 (page 10) is a map of the distribution of water rate structure types across the state. Almost all the 25 communities with increasing block rate structures are located in the eastern half of the state where water also tends to cost more. Most of the decreasing block rate structures are located in the central portion of the state. All of the MWRA supplied communities have either flat rate or increasing block rate structures.

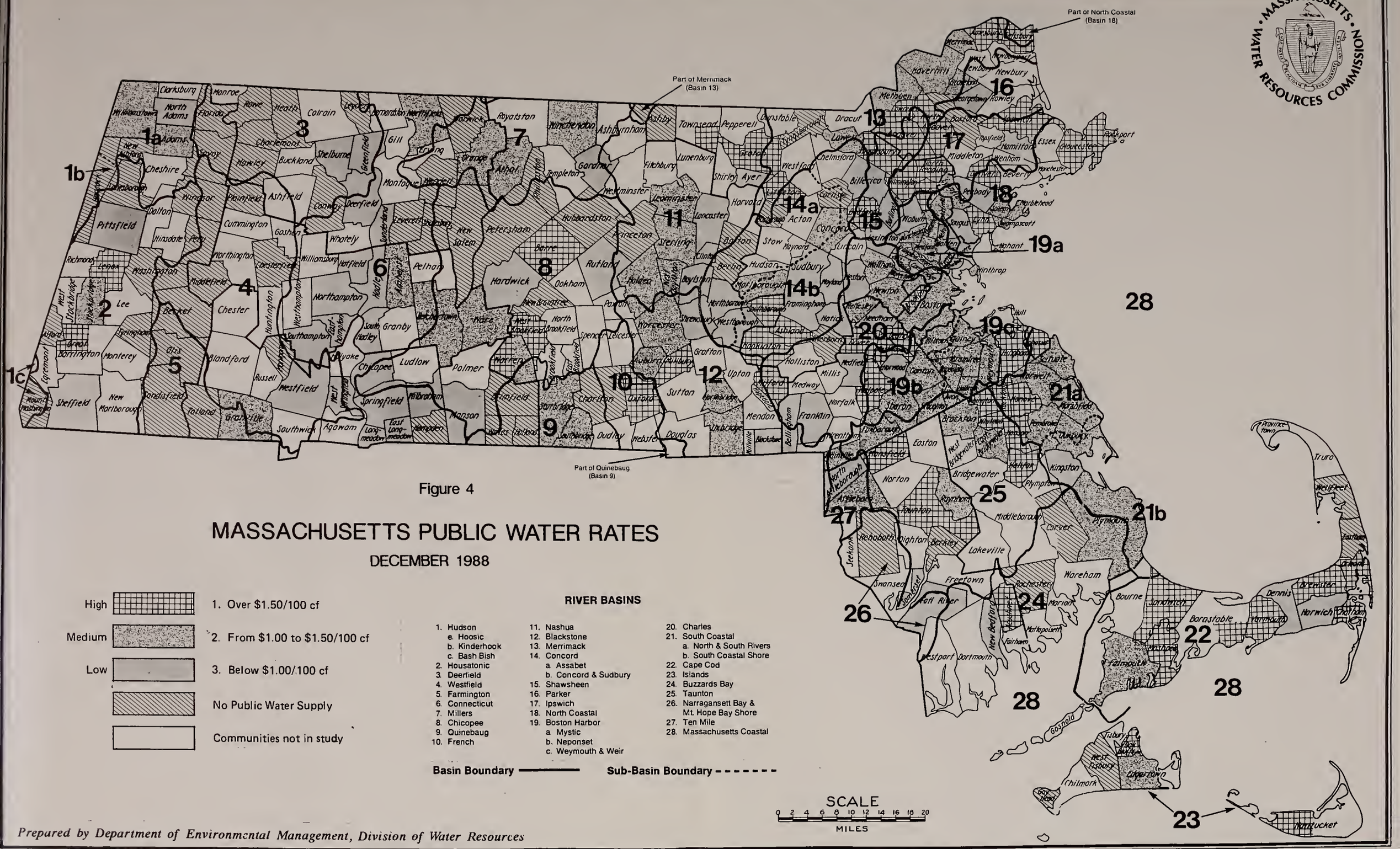


Figure 4

MASSACHUSETTS PUBLIC WATER RATES

DECEMBER 1988

High — 1. Over $1.50/100 cf

Medium — 2. From $1.00 to $1.50/100 cf

Low — 3. Below $1.00/100 cf

No Public Water Supply

Communities not in study

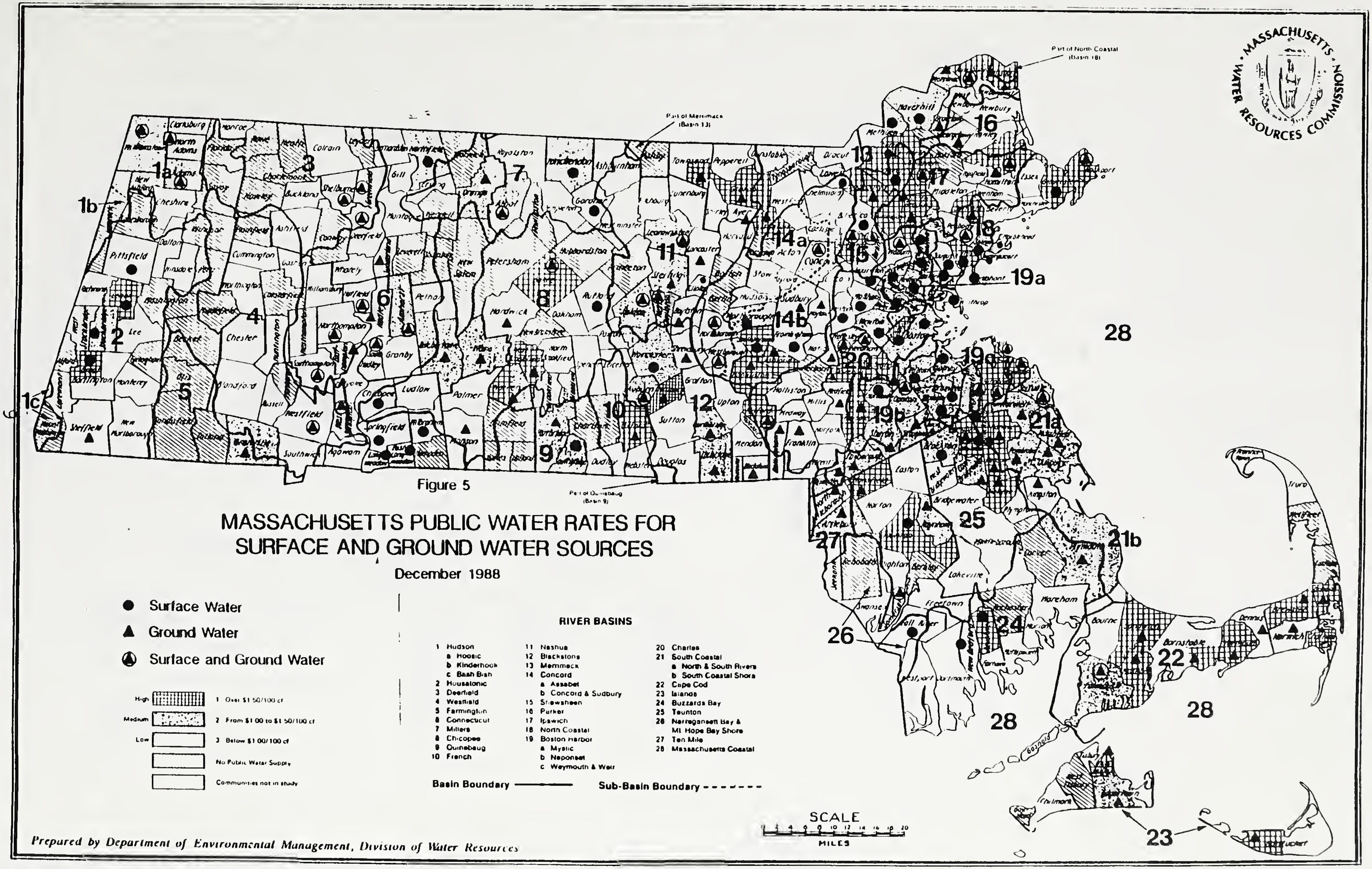
RIVER BASINS

1. Hudson
   - a. Hoosic
   - b. Kinderhook
   - c. Bash Bish
2. Housatonic
3. Deerfield
4. Westfield
5. Farmington
6. Connecticut
7. Millers
8. Chicopee
9. Quinebaug
10. French
11. Nashua
12. Blackstone
13. Merrimack
14. Concord
    - a. Assabet
    - b. Concord & Sudbury
15. Shawsheen
16. Parker
17. Ipswich
18. North Coastal
19. Boston Harbor
    - a. Mystic
    - b. Neponset
    - c. Weymouth & Weir
20. Charles
21. South Coastal
    - a. North & South Rivers
    - b. South Coastal Shore
22. Cape Cod
23. Islands
24. Buzzards Bay
25. Taunton
26. Narragansett Bay & Mt. Hope Bay Shore
27. Ten Mile
28. Massachusetts Coastal

Basin Boundary ———— **Sub-Basin Boundary** - - - - - - -

Prepared by Department of Environmental Management, Division of Water Resources

This map is available on 11 x 17 inch paper. For a copy call the DEM, Division of Water Resources at (617) 727-3267.



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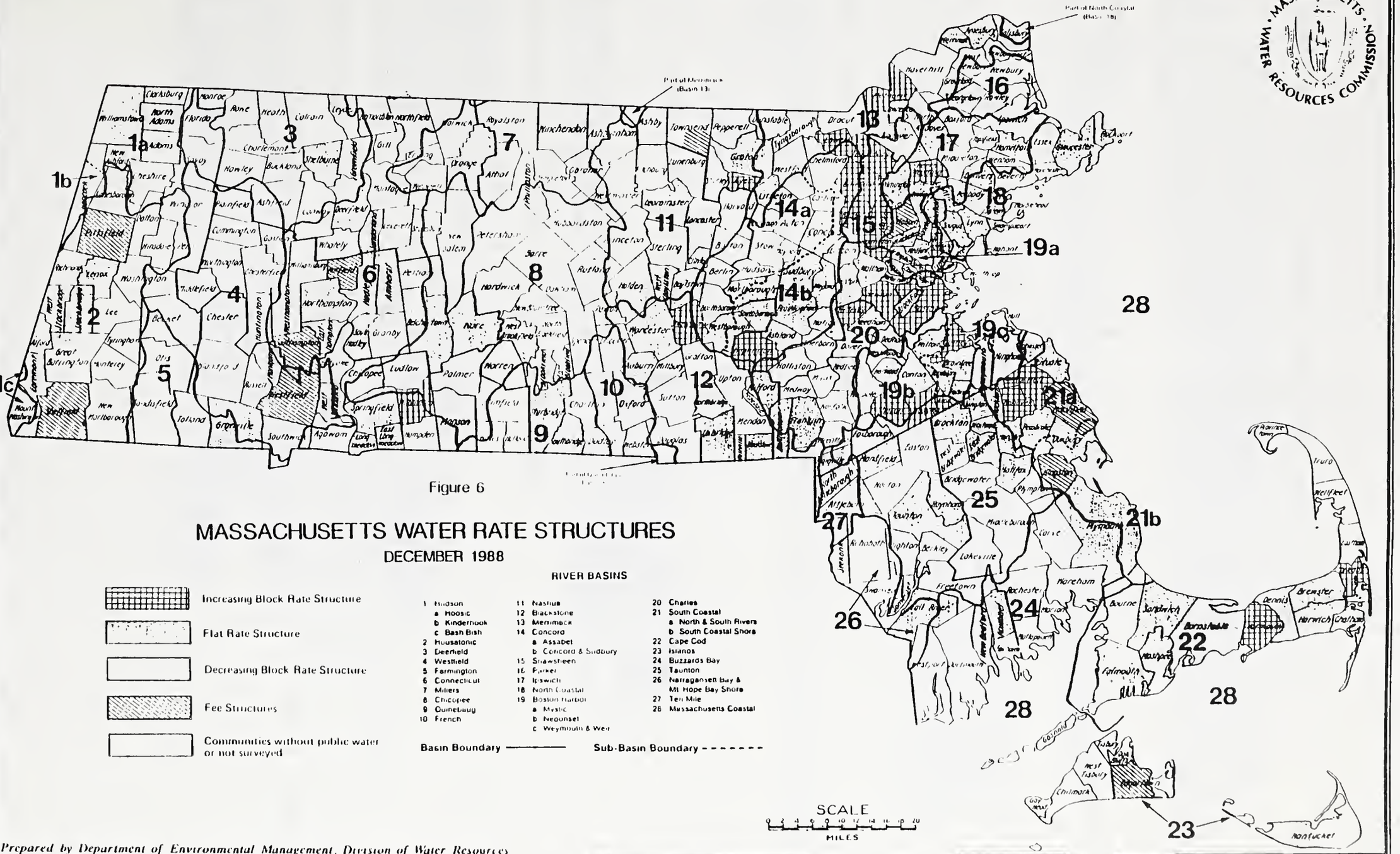


Figure 6

MASSACHUSETTS WATER RATE STRUCTURES

DECEMBER 1988

Prepared by Department of Environmental Management, Division of Water Resources

CHAPTER 2. PUBLIC SEWER RATES AND RATE STRUCTURES

Of the 172 communities served by public water suppliers that were surveyed for water rates, 137 have public sewer systems serving at least 10 percent of the town's population. The residents of the remaining communities dispose of their wastewater either by on-site septic systems or through very small public sewer systems. Several of these communities are in the process of installing public sewer systems.

Methodology

Most of the sewer rate information was collected by telephone interviews of public works and sewer departments during November and December 1988. Rates for the MWRA serviced communities were collected by the MWRA Advisory Board staff in late 1988.

The charge for residential sewer service in Massachusetts is usually either based on water consumption or a flat fee. The following four examples show the methods used to calculate the yearly residential bill for sewer service to a hypothetical four person household using 1,000 c.f. per month (7,480 gal.), or 12,000 c.f. per year (89,760 gal.). The average price per hcf, which is used to compare rates between communities of differing rate structures, is calculated by dividing the yearly residential bill by 120, which represents 120 units of hcf.

Example 1. Flat Rate Structure for Sewer (Town of Marblehead)

A. Billing Periods Per Year: - 2. Assume 12,000 c.f. per year divided by 2 = 6,000 c.f. per billing
B. Minimum Charge and Allotment: None
C. Rates:
   First Rate Block:
   Quantity: Covers all consumption
   Unit Cost: $1.60/hcf
D. Yearly Residential Bill:
   1. Assume 60 (hcf) consumed per billing
   2. $1.60 X 60 (hcf) = $96 per billing
   3. $96 X 2 billings per year = $192 per year
E. Average Price Per hcf: $192/year divided by 120 (hcf) = **$1.60/hcf**
F. Average Price Per 1,000 gal. $1.60 X 1.337 (hcf/1,000 gal.) = $2.14/1,000 gal.

Example 2. Flat Fee Structure for Sewer (City of Taunton)

A. Billing Periods Per Year: - 4.
B. Minimum Charge and Allotment: Not applicable
C. Rates: $120 flat fee charged per year for public sewer use
D. Yearly Residential Bill: 1. $120 flat fee charged per year
E. Average Price Per hcf: $120 per year divided by 120 (hcf) = **$1.00/hcf**
F. Average Price Per 1,000 gal.: $1.00/hcf X 1.337 (hcf/1,000 gal.) = $1.60/1,000 gal.

Example 3. Percentage of Water Bill Structure for Sewer (Town of Winchendon)

A. Billing Periods Per Year: - 2. Assume 12,000 c.f. per year divided by 2 = 6,000 c.f. per billing
B. Minimum Charge and Allotment: See water rate structure in Table A.
C. Rates: 60 percent of the water bill for the billing period.
D. Yearly Residential Bill: 0.60 X $167.00 = $100.20 per year
E. Average Price Per hcf: $100.20 divided by 120 (hcf) = **$0.84/hcf**
F. Average Price Per 1,000 gal.: $0.84/hcf X 1.337 (hcf/1,000 gal.) = $1.12/1,000 gal.

Example 4. Increasing or Decreasing Rate Block Structure for Sewer (City of Somerville)

A. Billing Periods Per Year: 4. Assume 12,000 c.f. per year divided by 4 = 3,000 c.f. per billing period

B. Minimum Charge and Allotment: None

C. Rates:

First Rate Block:
Quantity: 0-50 (hcf)
Unit Cost: $0.84/hcf

Second Rate Block:
Quantity: 50-100 (hcf)
Unit Cost: $0.86/hcf

Third Rate Block:
Quantity: 100+ (hcf)
Unit Cost: $0.88/hcf

D. Yearly Residential Bill:

1. Assume 30 (hcf) consumption
2. First Rate Block: $0.84 X 30 = $25.20 per billing
3. Second and Third Rate Blocks do not affect this customer
4. Total Yearly Cost: $25.20 X 4 billings = $100.80/year

E. Average Price Per hcf: $100.80 per year divided by 120 (hcf) = **$0.84/hcf**

F. Average Price Per 1,000 gal.: $0.84/hcf X 1.337 (hcf/1,000 gal.) = $1.12/1,000 gal.

Summary of Results

Rates

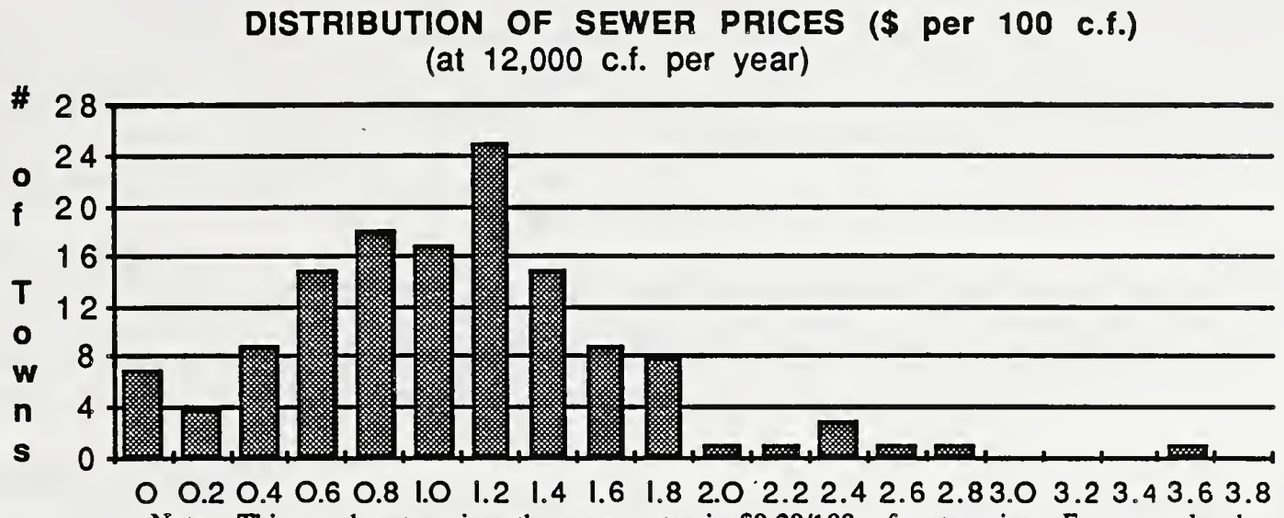
Table B (pages 30 - 35) displays the sewer rates for the 137 surveyed communities in order of highest to lowest price. The average four person household in Massachusetts pay about $1.16/hcf or $1.55/1,000 gal. for public sewer use based on this survey covering over 75 percent of the communities with public sewer systems. The average yearly sewer bill is about $139. This average figure for the surveyed communities was calculated by averaging the rates per hcf found in the 137 communities without weighting them with their service populations. The exact service population for many public sewer systems is not available at this time. Since many large cities have sewer prices lower than the $1.16/hcf average, the weighted average most likely is lower in the $1.05/hcf to $1.10/hcf range. Figure 6 shows the distribution of sewer rates between $0.00 and $3.80/hcf in $0.20/hcf intervals.

The $1.16/hcf average price and $139 yearly sewer bill is higher than the national average price of $1.08/hcf and yearly bill of $130.10 found by the 1988 Arthur Young National Water and Wastewater Rate Survey.

The highest sewer rate found in the surveyed communities is in the Town of Concord, where residents are charged $7.35/hcf for six months and then $0.00/hcf for the next six months, creating an average rate of $3.68/hcf for the year and a yearly bill of $441. The second highest sewer rates are in the Town of Ashland, where the semiannual billing has a minimum of $25 with a 1,600 c.f. allotment and then charges $3.46/hcf after 1,600 c.f.. Ashland's average price for the four person household is $2.95/hcf with a yearly bill of $354.

Seven communities in the survey have no charges for public sewer use and cover their sewer agency expenses with other revenue. These communities are Adams, Chicopee, Dedham, North Adams, Quincy, Somerset, and Swampscott.

Figure 6



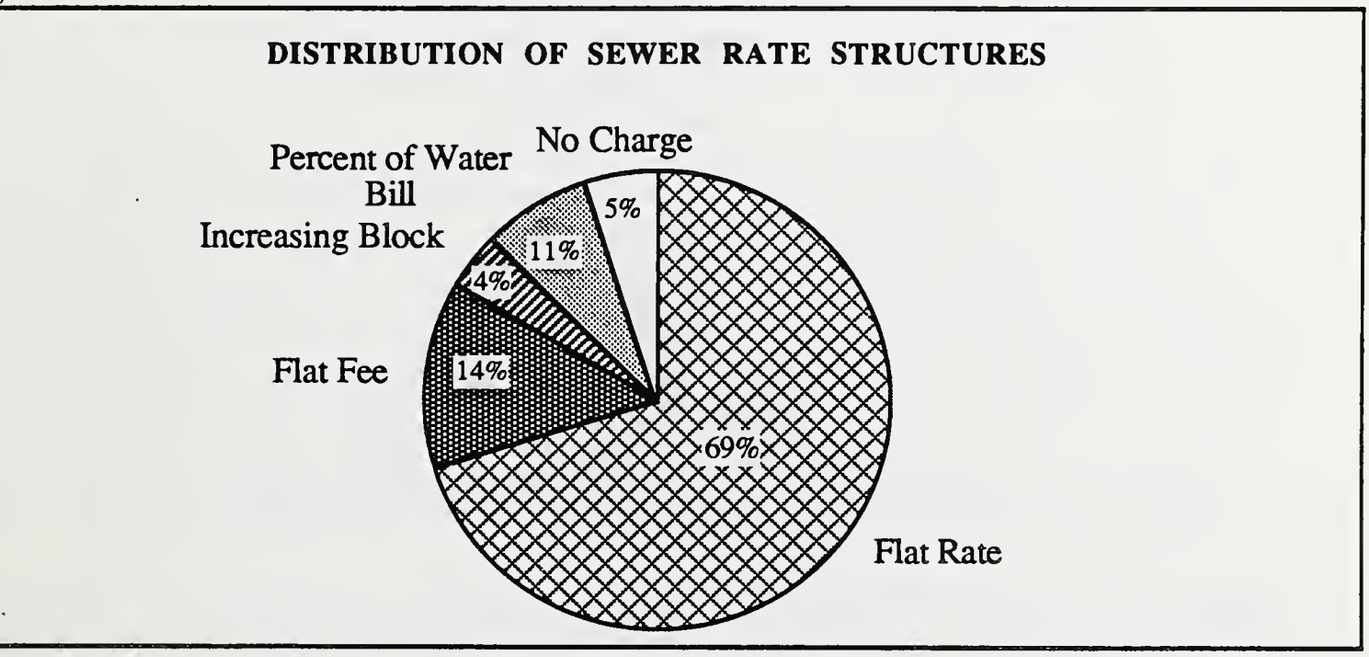
Note: This graph categorizes the sewer rates in $0.20/100 c.f. categories. For example, the "0.8" represents sewer prices in the $0.8-$1.0 range.

Rate Structures

There are a variety of methods used to charge for public sewer use. Ninty-five of the surveyed communities, or 69 percent, charge a flat rate per hcf or 1,000 gal. for sewer use based on metered water consumption. Sometimes the flat rate is based on a percentage of the metered water use in order to conceptually compensate the customer for evaporative losses and outdoor water use that does not contribute to wastewater flows. Five communities, or 4 percent, have increasing rate block structures specifically for sewer use. Figure 7 shows the rate structure breakdown.

Nineteen surveyed communities, or 14 percent, charge a flat fee for public sewer use while 11 communities, or 8 percent, charge a percentage of the water bill (in $). Depending on how the water rate is structured, the water bill percentage method is also structured in terms of increasing, decreasing, or flat rates. Seven communities, or 5 percent, have no charges for sewer service.

Figure 7



CHAPTER 3. COMBINED WATER AND SEWER RATES AND YEARLY BILLS

The combined water and sewer rates and yearly bills for the 137 communities surveyed which have both public water and sewer systems give the best overall picture of the current price paid for residential water use. Table C (pages 36 - 43) shows the combined water and sewer rates and yearly bills for the 137 communites ordered from highest to lowest combined price. Table D (pages 44 - 50) is an alphabetized listing of the communities with the rates and yearly bills for water, sewer, and combined water and sewer.

Methodology

The combined annual water and sewer bills were estimated simply by adding the yearly bills for water and for sewer found in Tables A and B respectively. The average price for combined water and sewer was calculated by dividing the combined yearly bill by 120 (hcf) to get an average per hcf for a four person household.

Summary of Results

The average four person household in the 137 surveyed communities consuming 1,000 c.f./month of water is billed directly about $2.30/hcf, or $3.07/1,000 gal., for public water and sewer service. The average yearly combined water and sewer bill is about $276. The average rate per hcf was calculated by adding the weighted average water rate and the average sewer bill for each community having both public water and sewer.

Table C (pages 36 - 43) shows the combined water and sewer rates and yearly bills for the 137 communities that have both public water and sewer service. As Figure 8 shows, there is a wide variety of combined rates in the surveyed communities. Twenty-eight communities, or 22 percent, have relatively high combined rates over $3.00/hcf Sixty-four, or 47 percent, fell into a medium combined rate range between $2.00 and $3.00/hcf Forty-four communities, or 32 percent, have combined rates below $2.00/hcf.

The highest combined rate is $5.38/hcf in Reading, which translates to about $646 per year. The lowest rate was found in Chicopee, where the household pays only $0.50/hcf, or $60 yearly, for public water and sewer use at 12,000 c.f. per year.

Figure 8

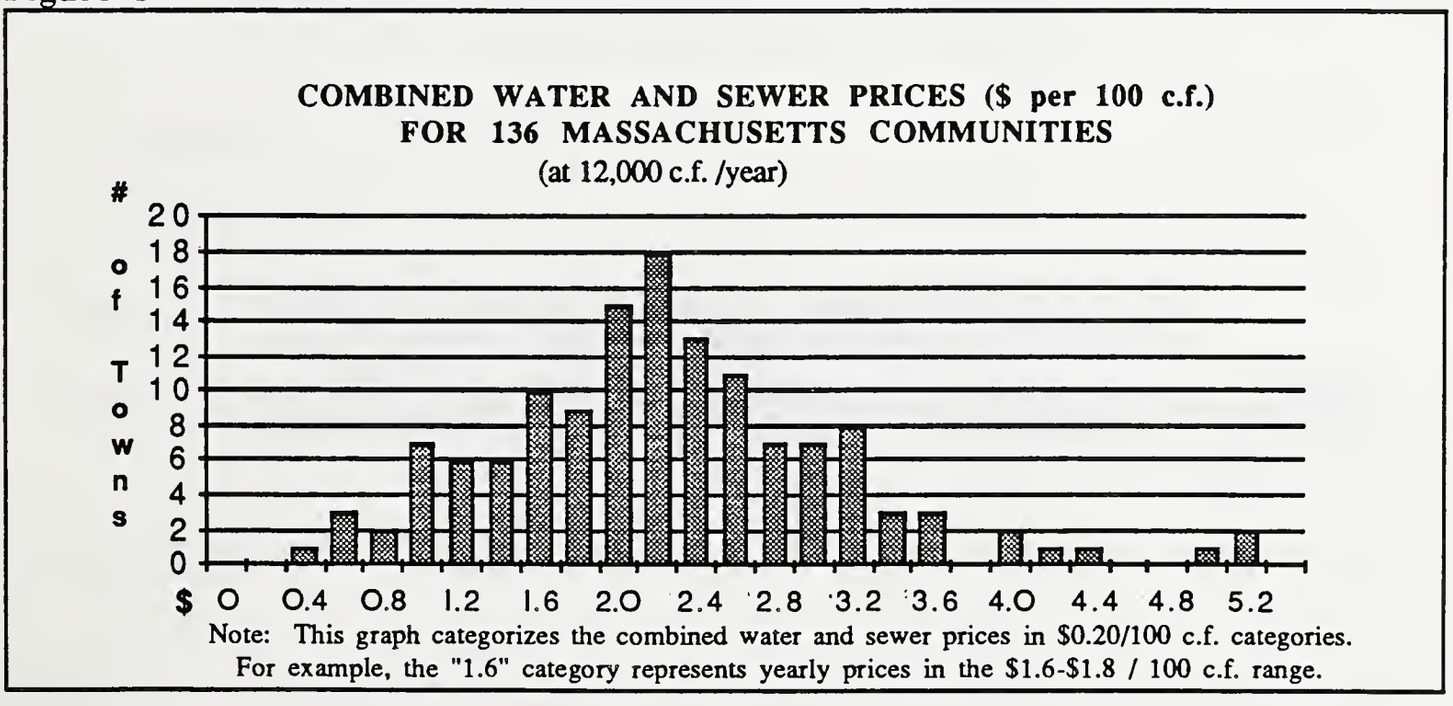
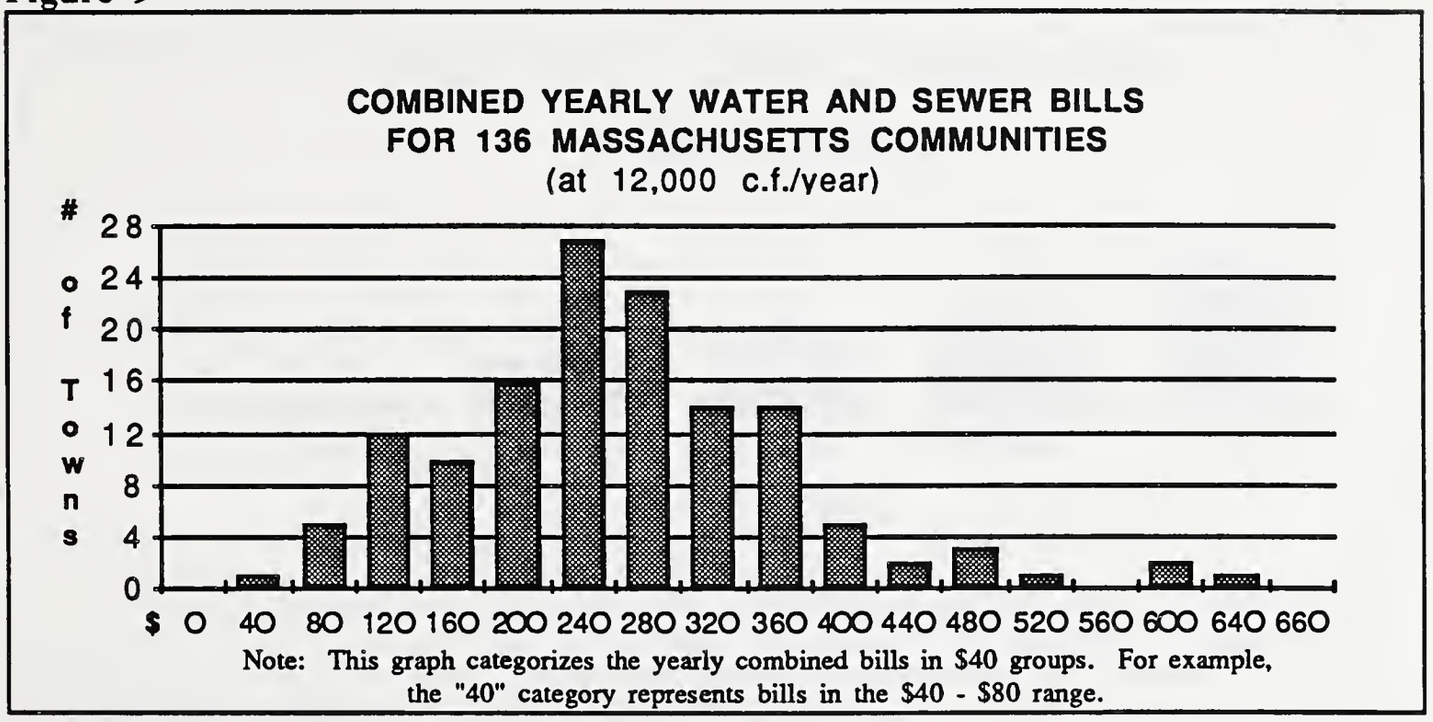


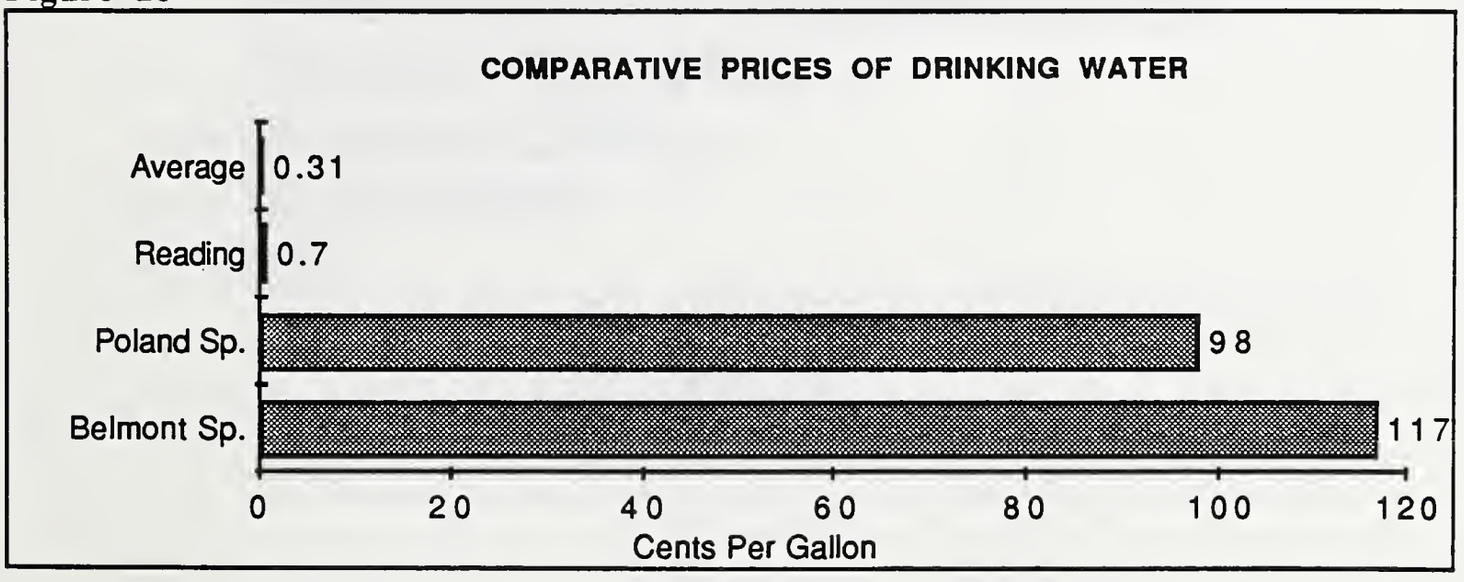
Figure 9 shows the distribution of combined water and sewer annual bills for the four-person household. Sixty-six communities, or 48 percent, have combined bills that fall into the $200- $280 range.

Figure 9



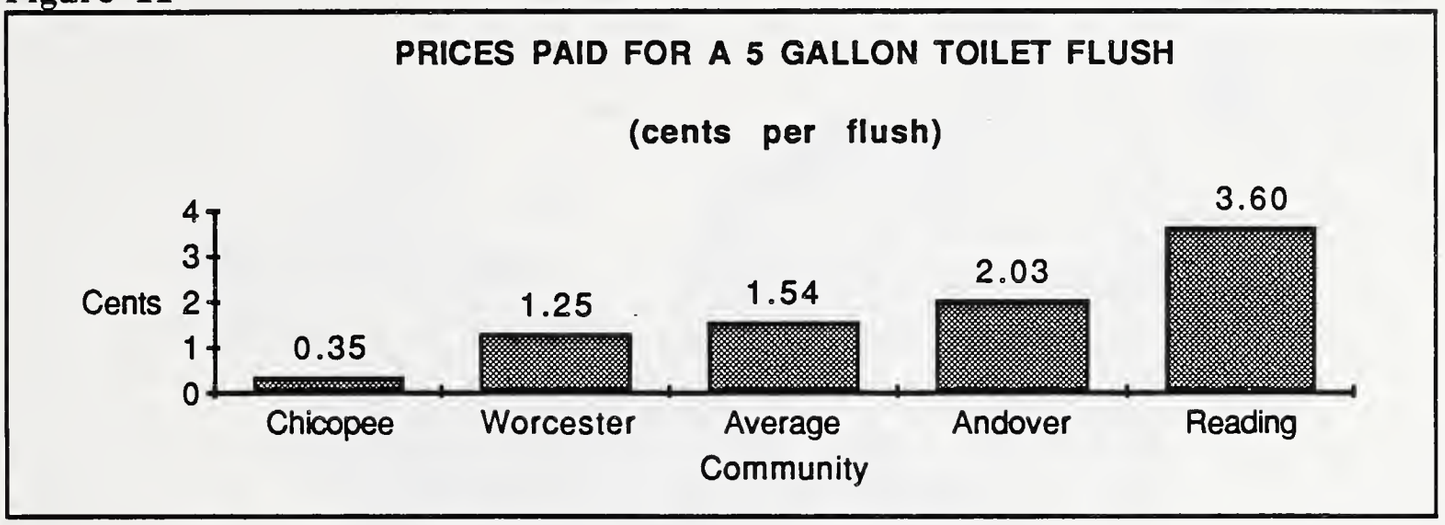
Another way to look at these combined rates in in the form of cents per gallon. Reading's high combined rate of $5.38/hcf translates to about 0.7 cents per gallon. In Chicopee the $0.50/hcf translates to about 0.07 cents per gallon, about 10 times less than in Reading. The price of water for drinking purposes supplied by the average public water system in the state is much lower than the cost of bottled water (see Figure 10). However, only a small fraction of household water consumption is for drinking purposes.

Figure 10



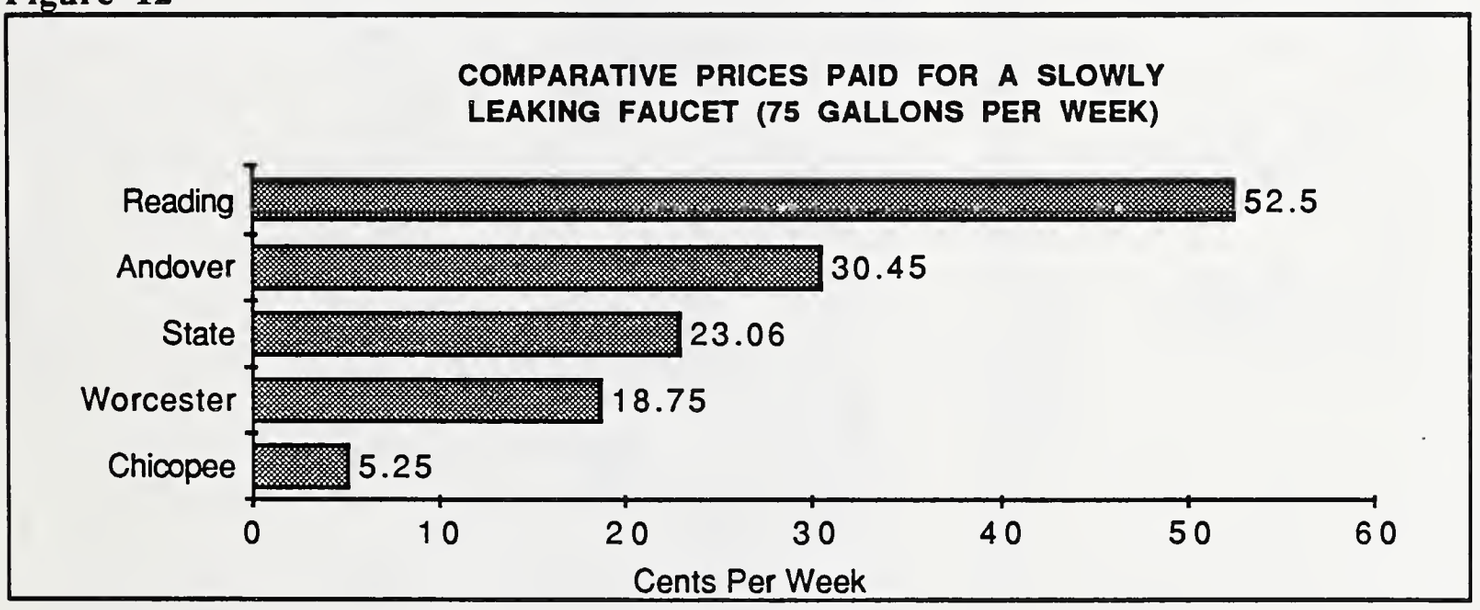
A four person household in Reading is billed about 3.6 cents for the water and sewer service used in a single five gallon toilet flush. In Chicopee, the household is billed only 0.35 cents for the single flush. Figure 11 shows the variation in prices paid for an average toilet flush.

Figure 11



A slowly leaking faucet can waste about 75 gallons per week of water. Because of the wide variation in combined water and sewer rates in the state, the prices paid for a leaking faucet vary around the state. The prices paid for wasteful water use practices by a household is one important factor in influencing people to conserve water. Figure 12 shows a comparison of water and sewer prices related to a leaky faucet.

Figure 12



This map is available on 11 x 17 inch paper.
For a copy call the DEM, Division of Water Resources at (617) 727-3267.

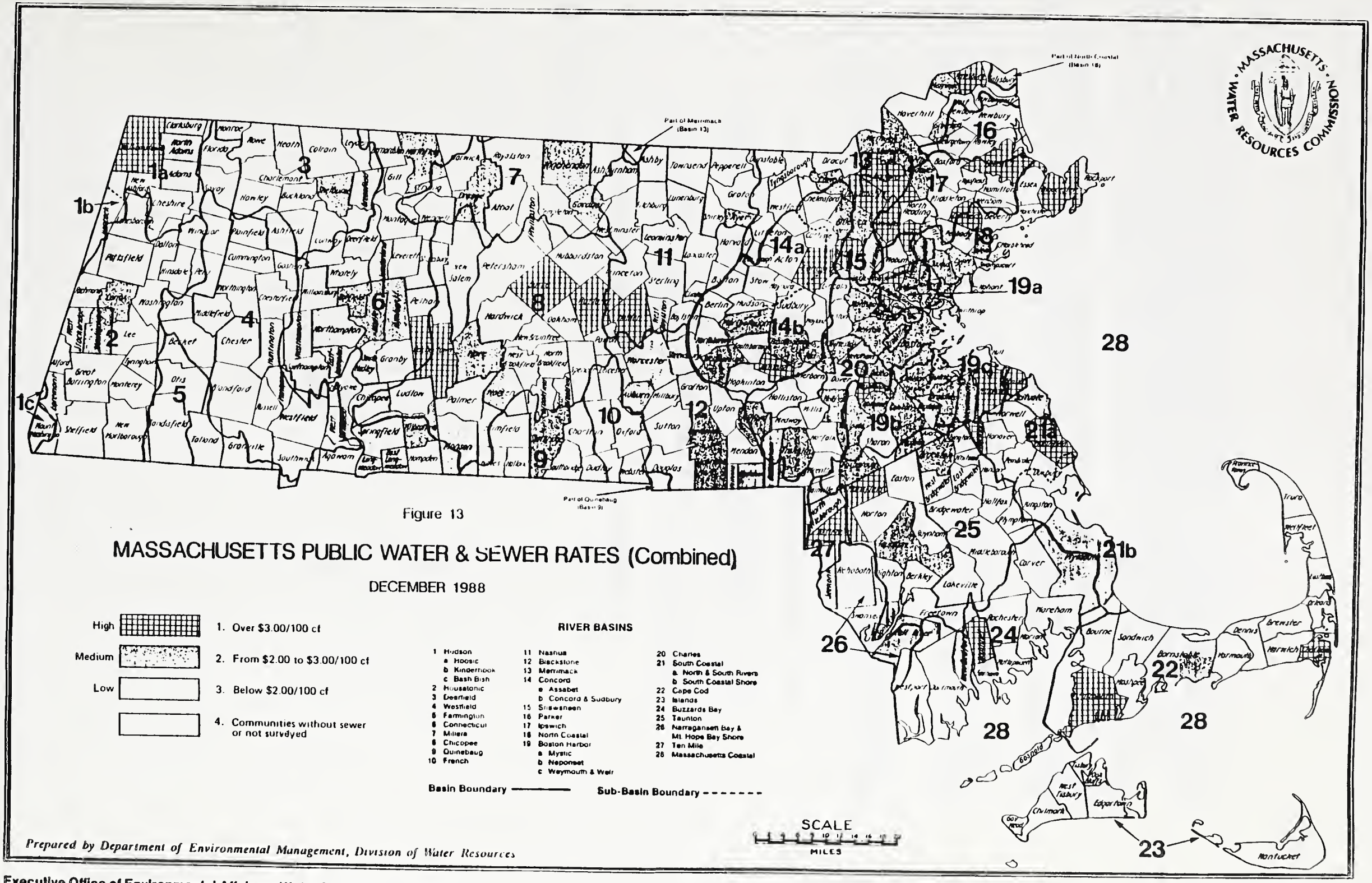


Figure 13

MASSACHUSETTS PUBLIC WATER & SEWER RATES (Combined)

DECEMBER 1988

High	1. Over $3.00/100 cf
Medium	2. From $2.00 to $3.00/100 cf
Low	3. Below $2.00/100 cf
	4. Communities without sewer or not surveyed

RIVER BASINS

1 Hudson
a Hoosic
b Kinderhook
c Bash Bish
2 Housatonic
3 Deerfield
4 Westfield
5 Farmington
6 Connecticut
7 Millers
8 Chicopee
9 Quinebaug
10 French
11 Nashua
12 Blackstone
13 Merrimack
14 Concord
a Assabet
b Concord & Sudbury
15 Shawsheen
16 Parker
17 Ipswich
18 North Coastal
19 Boston Harbor
a Mystic
b Neponset
c Weymouth & Weir
20 Charles
21 South Coastal
a North & South Rivers
b South Coastal Shore
22 Cape Cod
23 Islands
24 Buzzards Bay
25 Taunton
26 Narragansett Bay & Mt. Hope Bay Shore
27 Ten Mile
28 Massachusetts Coastal

Basin Boundary ———— Sub-Basin Boundary - - - - - - -

Prepared by Department of Environmental Management, Division of Water Resources

Executive Office of Environmental Affairs • Water Resources Commission

SUMMARY

Water and sewer rates in Massachusetts vary widely. The highest rates (water and sewer combined) found in the survey result in a annual cost of $646 per household and the lowest rates result in a annual cost of $60 per household. This is a 13 fold difference in cost for the same amount of water and sewer service. In order to determine these figures for the four person household, a water use assumption of 1,000 c.f. per month, or 12,000 c.f. per year, was made.

These results are based on water and sewer rate data collected from communities serving about 80 percent of the state's total population connected to public water systems. The remaining 20 percent were not included due to difficulty in reaching local water and sewer agency officials.

The results are categorized into high, medium, and low for analysis purposes. The difference between a community being designated as having high rates or medium rates could be only one cent per 100 cubic feet. Even the highest rate does no seem extremely "high" given the service provided.

In evaluating the appropriateness of a water rate, James Goldstein raised the following questions in a 1984 publication prepared for the Massachusetts Audubon Society entitled "Water Rates and Improved Water Utility Management:"

1. Does the rate provide adequate revenues to cover all costs of service?

2. Are costs fairly apportioned to each class of consumer, i.e., is the rate equitable to residential, commercial, and industrial users?

3. Are the rates acceptable to the public and local officials responsible for administering them?

4. Does the rate encourage or discourage water conservation?

Perhaps it's time to reevaluate.

KEY to TABLES A and B

Community — Name of community served by the water department, district, or company surveyed. Some of the water supply agencies cover only parts of the community.

Billing Periods Per Year — The number of times that residential customers are billed per year for water use.

Minimum Charge — The minimum charge, in dollars, for each billing period. Sometimes this is a service charge that must be paid irregardless of water consumption..

Allowance Per Billing Period (100 c.f.) — The amount of water (in 100 c.f.) allowed each billing period for the minimum charge. An "S" means that the minimum charge is a service charge and no water is given to the customer for that charge. An "M" means that the charge is the minimum payment per billing.

First Rate Block

Quantity (100 c.f.) — The range of water use (in 100 c.f.) covered in the first rate block. An "All" signifies a flat rate covering all water use.

Unit Cost per 100 c.f. — The price per 100 c.f. covering the quantity of water used in the first rate block.

Second Rate Block — Same method as the First Rate Block.

4 Person Household

Yearly Residential Bill — The cost in dollars for the consumption of 12,000 c.f. per year distributed equally over the year. This includes minimum charges and unit costs for each billing period.

Average Price Per 100 c.f. — The Yearly Residential Bill divided by 120 yields the average price per 100 c.f., assuming 12,000 c.f. consumption per year.

Average Price Per 1,000 gallons — The Average Price per 100 c.f. multiplied by 1.337 equals the cost per 1,000 gallons.

Rate Structure — I= Increasing Block; F= Flat Rate; D= Decreasing Block; S= Seasonal Rate Blocks; and NM= No meters

DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE A-1 -- WATER RATES AND RATE STRUCTURES FOR PUBLIC WATER AGENCIES ORDERED FROM HIGHEST TO LOWEST PRICE

DWR PRICING ANALYSIS

COMMUNITY	Billing Periods Per Yr	Minimum Charge $	Allowance Per Billing (100cf)	First Rate Block Quantity (100cf)	First Rate Block Unit Price per 100cf $	Second Rate Block Quantity (100cf)	Second Rate Block Unit Price per 100cf $	Third Rate Block Quantity (100cf)	Third Rate Block Unit Cost per 100cf $	YEARLY Residential Bill** (at 12,000 c.f./ year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 Gal. $	Rate Structure
HIGH WATER PRICE RANGE -- AVERAGE PRICE OVER $1.50 PER 100 CF (AT 12,000 CF/YEAR) 43 COMMUNITIES													
Sandwich	2	20.00	26.7	26.7+	0.75 (plus $2.08 per $1,000 assessed property value) ($163,500 is the average property value according to Dept. of Revenue)					430.1	3.58	4.79	F
Cohasset	4	18.00	S	All	2.20					336.0	2.80	3.74	F
Dedham	4	20.03	5	5-45	2.32	45+	1.11			311.8	2.60	3.47	D
Westwood	4	20.03	5	5-45	2.32	45+	1.11			311.8	2.60	3.47	D
Reading	4			All	2.59					310.8	2.59	3.46	F
Ashland				All	2.45					294.0	2.45	3.28	F
Oak Bluffs	1	200.00	40.1	40.1+	1.12					289.7	2.41	3.23	F
Amesbury	2	47.75	19	19+	2.25					280.0	2.33	3.12	F
Hanover	4	17.25	0	0-5	1.50	5-30	2.45	30+	3.00	344.0	2.87	3.83	I
Abington	4	10.00	S	All	1.95					274.0	2.28	3.05	F
Rockland	4	10.00	S	All	1.95					274.0	2.28	3.05	F
Ipswich	4	28.80	12	12-30	2.20	30-100	1.75	100-200	1.30	273.6	2.28	3.05	D
Ipswich(cont)			4th block--	200+	1.20								
Groton	4	10.00	M	All	2.25					270.0	2.25	3.01	F
Tewksbury	2			0-200.5	2.24	200.5+	3.37			268.8	2.24	2.99	I
Nahant	2			All	2.10					252.0	2.10	2.81	F
North Reading	2			0-53.5	1.87	53.5+	2.99			239.0	1.99	2.66	I
Orleans	1	80.00	40.1	40.1-80.2	1.50	80.2-134	2.43	134+	2.99	236.9	1.97	2.63	I
West Brookfield	4	30.00	7	7+	1.25					235.0	1.96	2.62	F
Littleton	4	7.50	S	All	1.67					230.4	1.92	2.57	F
Taunton	?			All	1.85					222.0	1.85	2.47	F

** Yearly residential bill for 4 person household based on 1,000 cf/month, or 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

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Southborough	4			All	1.82					218.0	1.82	2.43	F
Warren (W.)	2	34.00	15	15+	1.65					216.5	1.80	2.41	F
Danvers	4			All	1.79					214.8	1.79	2.39	F
Whitman	2	17.00	M	All	1.70					204.0	1.70	2.27	F
Bedford	2			0-20	0.80	20+	2.10			200.0	1.67	2.23	I
Andover	2	0.00		All	1.66					199.2	1.66	2.22	F
Brookline	4			All	1.65					198.0	1.65	2.21	F
Lenox	?		All	1.65						198.0	1.65	2.21	F
Wilmington	4			All	1.65					198.0	1.65	2.21	F
Gloucester	2		All	1.62						194.8	1.62	2.17	F
Brewster	2	30.00	26.7	26.7+	1.12					194.4	1.62	2.17	F
North Andover	4	4.00	4	4+	1.70					192.8	1.61	2.15	F
Acushnet				All	1.60					192.0	1.60	2.14	F
Hanson	2	24.00	M	All	1.60					192.0	1.60	2.14	F
Halifax	2	65.00	26.7	26.7+	0.90					189.9	1.58	2.12	F
Yarmouth	1	120.00	53.5	53.5-134	1.05	134-267	1.23	267-401	1.42	189.8	1.58	2.11	I
Yarmouth (Cont)				401-535	1.57	535-668	1.72	668+	1.80				
Walpole	2			All	1.55					186.0	1.55	2.07	F
Barre	2	30.00	M	All	1.50					180.0	1.50	2.01	F
Chatham (Summer)	4	24.00	10	10-30	2.55	30-50	2.70	50+	2.85	180.0	2.03	2.72	S
Chatham (Winter)	4	24.00	10	10-30	1.60	30-50	1.70	50+	1.80				
Hopkinton	2	30.00	20	20-100	1.50	100+	3.00			180.0	1.50	2.01	I
Lawrence	1	18.00	S	All	1.35					180.0	1.50	2.01	F
Lynn	4			All	1.50					180.0	1.50	2.01	F
Mansfield	4			All	1.50					180.0	1.50	2.01	F

** Yearly residential bill for 4 person household based on 1,000 cf/month, or 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

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COMMUNITY	Billing Periods Per Yr	Minimum Charge $	Allowance Per Billing (100cf)	First Rate Block Quantity (100cf)	First Rate Block Unit Price per 100cf $	Second Rate Block Quantity (100cf)	Second Rate Block Unit Price per 100cf $	Third Rate Block Quantity (100cf)	Third Rate Block Unit Cost per 100cf $	YEARLY Residential Bill** (at 12,000 c.f./ year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 Gal. $	Rate Structure
Rockport	1	Billed $180 flat fee per year								180.0	1.50	2.01	F
		MIDRANGE WATER PRICES -- AVERAGE PRICE FROM $1.00 TO $1.50 PER 100 CF (AT 12,000 CF/YEAR)											
		70 COMMUNITIES											
Groveland	2	12.00	24	24+	1.30					177.6	1.48	1.98	F
Amherst	4	4.90	S	All	1.30					175.6	1.46	1.96	F
Northbridge	4	17.40	10	10-150	1.32	150+	0.81			175.2	1.46	1.95	D
Marshfield	2	Billed by fixtures, assume 2 bathrms + garage and outdoor faucets								174.0	1.45	1.94	NM
Milton	2	12.00	12	12+	1.50					168.0	1.40	1.87	F
Williamstown	4			All	1.40					168.0	1.40	1.87	F
Winchester	2			All	1.40					168.0	1.40	1.87	F
Norwell	2			0-40.1	1.31	40.1-66.8	1.57	66.8+	1.87	167.5	1.40	1.87	I
Winchendon	2	16.00	10	10-500	1.35	500+	0.50			167.0	1.39	1.86	D
Holden	4	10.88	5	5+	1.21					164.5	1.37	1.83	F
Arlington	2			All	1.37					164.4	1.37	1.83	F
Sturbridge	4	15.00	10	10+	1.30					164.0	1.37	1.83	F
Brockton	2			All	1.35					162.0	1.35	1.80	F
Concord	2			All	1.35					162.0	1.35	1.80	F
Methuen	2	11.00	10	10-50	1.30	50-100	1.80	100+	1.95	162.0	1.35	1.80	I
Sharon	2	24.00	20.1	20.1-40.1	1.35	40.1-60.2	1.50	60.2+	1.65	161.8	1.35	1.80	I
Merrimac	2	38.00	26.7	26.7+	1.27					160.6	1.34	1.79	F
Granville	4	25.00	10	10+	0.75					160.0	1.33	1.78	F
Canton	3			All	1.33					159.6	1.33	1.78	F
Belmont	4	9.60	8	8+	1.35					157.2	1.31	1.75	F

** Yearly residential bill for 4 person household based on 1,000 cf/month, or 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

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DWR PRICING ANALYSIS

COMMUNITY	Billing Periods Per Yr	Minimum Charge $	Allowance Per Billing (100cf)	First Rate Block Quantity (100cf)	First Rate Block Unit Price per 100cf $	Second Rate Block Quantity (100cf)	Second Rate Block Unit Price per 100cf $	Third Rate Block Quantity (100cf)	Third Rate Block Unit Cost per 100cf $	YEARLY Residential Bill** (at 12,000 c.f./ year)	AVERAGE Price Per 100cf $	AVERAGE Price Per 1,000 Gal. $	Rate Structure
Plainville	1	60.00	33.4	33.4+	1.12					157.2	1.31	1.75	F
Attleboro	?			All	1.30					156.0	1.30	1.74	F
Winthrop	4			All	1.26					151.2	1.26	1.68	F
Northfield	2	45.00	15	15-35	0.75	35-55	0.65	55+	0.50	151.0	1.26	1.68	D
Orange	?			All	1.25					150.0	1.25	1.67	F
Swampscott	2			All	1.25					150.0	1.25	1.67	F
Ware	4	10.00	8	8+	1.25					150.0	1.25	1.67	F
Dennis	1	60.00	40.1	40.1+	1.12					149.5	1.25	1.67	F
Lynnfield W.D.	2	60.00	40	40+	1.10					148.0	1.23	1.65	F
Boston	4	Billed according to use per day with 10 slightly ascending rate blocks								146.9	1.22	1.64	I
Weymouth	12	3.00	2	2-1502	1.15 3 additional steps drop to 0.85/100cf					146.4	1.22	1.63	D
Worcester	2			All	1.22					146.4	1.22	1.63	F
Sterling	4	18.00	5.35	5.35+	0.75					146.0	1.22	1.63	F
Auburn	4	12.00	8	8+	1.10					144.8	1.21	1.61	F
East Bridgewater	2	25.00	8	8+	1.00					144.0	1.20	1.60	F
Falmouth	?			All	1.20					144.0	1.20	1.60	F
Marblehead	2			All	1.20					144.0	1.20	1.60	F
Avon	2	21.00	20	20-80	1.25	80-160	1.40	160-300	1.50	142.0	1.18	1.58	I
Avon (cont)			(4th block)	300-400	1.80		(5th block)	400+	3.00				
West Boylston	4	18.00	6.68	6.68+	0.75					142.0	1.18	1.58	F
Belchertown	2	27.50	12	12+	0.90					141.4	1.18	1.58	F
Medford	2			All	0.78 + 50% surcharge for MWRA costs					140.4	1.17	1.56	F
Stoneham	4			All	1.17					140.4	1.17	1.56	F
Plymouth	2	28.00	S	All	0.70					140.0	1.17	1.56	F
Chelsea	4			All	1.15					138.0	1.15	1.54	F

** Yearly residential bill for 4 person household based on 1,000 cf/month, or 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE A-1 -- WATER RATES AND RATE STRUCTURES FOR PUBLIC WATER AGENCIES ORDERED FROM HIGHEST TO LOWEST PRICE

DWR PRICING ANALYSIS

COMMUNITY	Billing Periods Per Yr	Allowance Minimum Charge $	Allowance Per Billing (100cf)	First Rate Block Quantity (100cf)	First Rate Block Unit Price per 100cf $	Second Rate Block Quantity (100cf)	Second Rate Block Unit Price per 100cf $	Third Rate Block Quantity (100cf)	Third Rate Block Unit Cost per 100cf $	YEARLY Residential Bill** (at 12,000 c.f./ year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 Gal. $	Rate Structure
Wakefield	4			All	1.15					138.0	1.15	1.54	F
Raynham (Cntr)	2	50.00	40.1	40.1+	0.94					137.4	1.15	1.53	F
Adams	2	68.00	Service charge	Flat fee for water service						136.0	1.13	1.52	F
Athol	2	24.00	20	20-140	1.10	140+	1.00			136.0	1.13	1.52	D
Duxbury	2	21.00	12	12+	0.97					135.1	1.13	1.51	F
Pembroke	2			All	1.12					134.7	1.12	1.50	F
Somerville	4	0-50	1.11	50-100	1.14	100+	1.17			133.2	1.11	1.48	I
Newton	2			0-40	1.04	40-80	1.23	80+	1.42	132.4	1.10	1.48	I
Marlborough	4			All	1.10					132.0	1.10	1.47	F
Wellesley	6			0-25	1.10	25+	1.60	(for 4 summer months)		132.0	1.10	1.47	S
Holbrook	2	Flat Fee for water service								130.0	1.08	1.45	F
Stoughton	2	20.00	10	10-20	0.80	20-52	0.90	52-118	1.00	129.6	1.08	1.44	I
Stoughton (cont1)		(4th-6th blocks)		118-184	1.10	184-250	1.20	250-500	1.30				
Stoughton (cont2)		(7th-8th blocks)		500-1,000	1.40	1,000+	1.65						
Salem	4	10.50	10	10+	1.05					126.0	1.05	1.40	F
Quincy	2			0-85	1.04	85-500	1.09	500-1,000	1.14	124.8	1.04	1.39	I
Quincy (cont)		(4th and 5th block)		1000-2,000	1.24	2,000+	1.29						
Harwich	1	50.00	53.5	53.5+	1.12					124.6	1.04	1.39	F
Warren	2	15.00	10	10-40	1.00	40-250	0.85	250+	0.55	124.0	1.03	1.38	D
Foxborough	2			0-15	1.21	15-90	0.97	90-150	0.85	123.6	1.03	1.38	D
Foxborough (cont)			(4th block)	150+	0.61								
Lowell	4			0-5	0.55	5+	1.10			121.0	1.01	1.35	I
Braintree	4			All	1.00					120.0	1.00	1.34	F
Leominster	4			All	1.00					120.0	1.00	1.34	F
Randolph	2			All	1.00					120.0	1.00	1.34	F

** Yearly residential bill for 4 person household based on 1,000 cf/month, or 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE A-1 -- WATER RATES AND RATE STRUCTURES FOR PUBLIC WATER AGENCIES ORDERED FROM HIGHEST TO LOWEST PRICE

DWR PRICING ANALYSIS

COMMUNITY	Billing Periods Per Yr	Minimum Charge $	Allowance Per Billing (100cf)	First Rate Block Unit Price Quantity (100cf)	First Rate Block Unit Price per 100cf $	Second Rate Block Unit Price Quantity (100cf)	Second Rate Block Unit Price per 100cf $	Third Rate Block Quantity (100cf)	Third Rate Block Unit Cost per 100cf $	YEARLY Residential Bill** (at 12,000 c.f./ year)	AVERAGE Price Per 100cf $	AVERAGE Price Per 1,000 Gal. $	Rate Structure
Scituate	1	50.00	50	50+	1.00					120.0	1.00	1.34	F
Stockbridge	2	20.00	M	All	1.00					120.0	1.00	1.34	F
Uxbridge	2	16.00	M	All	1.00					120.0	1.00	1.34	F
Waltham	4			All	1.00					120.0	1.00	1.34	F
LOWER WATER PRICE RANGE -- AVERAGE PRICE BELOW $1.00 PER 100 CF (AT 12,000 CF/YEAR) 60 COMMUNITIES													
Lexington	2			0-100	0.99	100+	1.19			118.8	0.99	1.32	I
Gardner	?			All	0.98					117.6	0.98	1.31	F
Longmeadow	?			All	0.98					117.6	0.98	1.31	F
Georgetown	2	26.00	24	24+	0.90					116.8	0.97	1.30	F
Watertown	2	16.00	25	25+	1.19					115.3	0.96	1.28	F
Hamilton	4	30.00	26.7	26.7+	0.82					114.7	0.96	1.28	F
Norwood	4			All	0.93					111.6	0.93	1.24	F
Hardwick	2	13.00		0-13	1.00	13-100	0.90	100-150	0.75	110.6	0.92	1.23	D
Kingston	2	No meters on residential users, billed flat rate								110.0	0.92	1.23	NM
Framingham	3			All	0.90					108.0	0.90	1.20	F
Franklin	2			All	0.90					108.0	0.90	1.20	F
Rutland	2	18.00	12	12+	0.75					108.0	0.90	1.20	F
Wayland	?			All	0.90					108.0	0.90	1.20	F
Bellingham				All	0.90					107.7	0.90	1.20	F
Billerica	3	10.00	0	0-20	0.78	20-100	0.98	100+	1.17	105.6	0.88	1.18	I
Malden	2	15.00	10	10-50	0.72	50-250	0.83	250-1,000	1.19	104.2	0.87	1.16	I

** Yearly residential bill for 4 person household based on 1,000 cf/month, or 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE A-1 -- WATER RATES AND RATE STRUCTURES FOR PUBLIC WATER AGENCIES ORDERED FROM HIGHEST TO LOWEST PRICE

DWR PRICING ANALYSIS

COMMUNITY	Billing Periods Per Yr	Minimum Charge $	Allowance Per Billing (100cf)	First Rate Block Quantity (100cf)	First Rate Block Unit Price per 100cf $	Second Rate Block Quantity (100cf)	Second Rate Block Unit Price per 100cf $	Third Rate Block Quantity (100cf)	Third Rate Block Unit Cost per 100cf $	YEARLY Residential Bill** (at 12,000 c.f./ year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 Gal. $	Rate Structure
Cambridge	2			All	0.85					102.0	0.85	1.14	F
Westborough	2	10.00	0	All	0.68					101.6	0.85	1.13	F
Natick	4			All	0.84					100.8	0.84	1.12	F
Melrose	2			0-50	0.82	50-100	0.92	100-150	1.02	100.4	0.84	1.12	I
Melrose (cont)			4th block)	150+	1.07								
Hatfield		No meters, billed a flat rate								100.0	0.83	1.11	NM
Southampton	2	50.00	S No meters							100.0	0.83	1.11	NM
Peabody	4			All	0.81					97.2	0.81	1.08	F
East Longmeadow	2			0-100	0.80	100-1,200	0.70	1,200+	0.55	96.0	0.80	1.07	D
Everett	4			All	0.80					96.0	0.80	1.07	F
Lancaster	4			0-10	1.20	10+	0.60			96.0	0.80	1.07	D
Saugus	2			All	0.80					96.0	0.80	1.07	F
North Adams	4	4.50	S	0-50	0.79	50-150	0.72	150-500	0.69	94.4	0.79	1.05	D
North Adams (cont)			(4th Block)	500+	0.63								
Pittsfield	2	Non-metered, billed according to fixtures								94.4	0.79	1.05	NM
New Bedford	2	2.63	S	0-10,000	0.75	10,000+	0.41			92.3	0.77	1.03	D
Boylston	4	10.00	6.68	6.68+	0.56					92.2	0.77	1.03	F
Shrewsbury	4	10.00	6.68	6.7-66.8	0.56	66.8+	0.75			92.2	0.77	1.03	I
Greenfield	2			All	0.75					90.0	0.75	1.00	F
Hadley	2			All	0.75					90.0	0.75	1.00	F
Medfield	?			All	0.75					90.0	0.75	1.00	F
Northborough	2			All	0.75					90.0	0.75	1.00	F
Sudbury	2	9.00	12	12+	0.75					90.0	0.75	1.00	F
Wilbraham	2			0-100	0.75	100-200	1.00	200+	1.25	90.0	0.75	1.00	I
Needham	2			All	0.72					86.4	0.72	0.96	F

** Yearly residential bill for 4 person household based on 1,000 cf/month, or 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE A-1 -- WATER RATES AND RATE STRUCTURES FOR PUBLIC WATER AGENCIES ORDERED FROM HIGHEST TO LOWEST PRICE

DWR PRICING ANALYSIS

COMMUNITY	Billing Periods Per Yr	Minimum Charge $	Allowance Per Billing (100cf)	First Rate Block Quantity (100cf)	First Rate Block Unit Price per 100cf $	Second Rate Block Quantity (100cf)	Second Rate Block Unit Price per 100cf $	Third Rate Block Quantity (100cf)	Third Rate Block Unit Cost per 100cf $	YEARLY Residential Bill** (at 12,000 c.f./ year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 Gal. $	Rate Structure
Monson	1	35.00	26.7	26.7-66.8	0.59	66.8-133.9	0.52	133.9-401.1	0.45	86.3	0.72	0.96	D
Monson (cont)		(4th-6th blocks)		401.1-668.5	0.37	669-1,337	0.30	1,337+					
Fall River	2			All	0.71					85.2	0.71	0.95	F
Ayer	2			0-100	0.70	100+	1.00			84.0	0.70	0.94	I
Shelburne	?			All	0.70					84.0	0.70	0.94	F
Woburn	2	(billed flat fee of $ year)								84.0	0.70	0.94	NM
Somerset	2	5.00		All	0.60	(declining rates to 0.35 for larger meters)				82.0	0.68	0.91	D
Sunderland	2	22.50	20.1	20.1+	0.45					81.0	0.68	0.90	F
Revere	2			All	0.67					80.4	0.67	0.90	F
Westfield	2	12.50		Non-metered, billed according to fixtures						80.0	0.67	0.89	NM
Blackstone	2	15.00	26.7	26.7+	0.75					79.9	0.67	0.89	F
Burlington	2	15.00	26.7	26.7-40.1	0.67	40.1-66.8	0.79	66.8-93.6	0.94	79.3	0.66	0.88	I
Burlington (cont)			(4th block)	93.6+	1.12								
Northampton	?			All	0.65					78.0	0.65	0.87	F
South Hadley	4	10.00	15	15-40	0.60	40+	0.45			76.0	0.63	0.85	D
West Springfield	2	10.00	20	20-200	0.70	200-1,000	0.65	1,000+	0.55	76.0	0.63	0.85	D
Weston	2			All	0.57					68.4	0.57	0.76	F
Deerfield	?			All	0.56					67.2	0.56	0.75	F
Chicopee	4	5.30	10	10-100	0.45	100-500	0.39	500-1,000	0.33	60.4	0.50	0.67	D
Chicopee (cont1)		(4-6th blocks)		1,000-10,000	0.26	-35,000	0.16	-125,000	0.12				
Chicopee (cont2)		(7th block)		125,000+	0.08								
Springfield	?			All	0.50					60.0	0.50	0.67	F
Easthampton	?			All	0.46					55.2	0.46	0.61	F
Clinton	2	21.50	50	50+	0.43					51.6	0.43	0.57	F
North Attleboro	2	18.00	50	50+	0.37					43.4	0.36	0.48	F

** Yearly residential bill for 4 person household based on 1,000 cf/month, or 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

TABLE A-2 -- WATER RATE STRUCTURES FOR PRIVATE COMPANIES ORDERED FROM HIGHEST TO LOWEST PRICE

DWR PRICING ANALYSIS

WATER COMPANY - COMMUNITY	Billing Periods Per Yr	Minimum Charge $	Allowance Per Billing (100cf)	First Rate Block Unit Price Quantity (100cf)	First Rate Block Unit Price per 100cf $	Second Rate Block Unit Price Quantity (100cf)	Second Rate Block Unit Price per 100cf $	Third Rate Block Unit Price Quantity (100cf)	Third Rate Block Unit Price per 100cf $	YEARLY Residential Price** (at 12,000 c.f./ year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 Gal. $	Rate Structure
Dover Water Company	4	90.00	20.1	20.1-46.8	2.99	46.8-80.2	3.74	80.2-133.7	4.49	$478.4	$3.99	$5.33	I
Dover W.C. (cont.)			(4th block)	133.7+	5.05								
Assebet W.C. (Stow)	1	273.00	86.9	86.9+	4.49					$421.6	$3.51	$4.70	F
Hutchinson W.C.(Cheshire)	1	160.00	50	50+	2.90					$363.0	$3.03	$4.04	F
Salisbury W.C.	4	37.41	S	0-200.5	1.70	200.5+	1.01			$353.6	$2.95	$3.94	D
High Wood W.C. (Mashpee)	1	163.50	26.7	26.7-160.4	2.02	160.4-401.1	1.80	401.1+	1.23	$352.0	$2.93	$3.92	D
Wannacomet W.C. (Nantucket)	1	81.25	9	All	1.96					$298.8	$2.49	$3.33	F
Kings Grant W.C.(N.Atlebro)	4	40.00	S	All	1.08					$289.3	$2.41	$3.22	F
Barnstable Water Company	12	5.27	3	3-50	0.88	50-100	0.74	100-200	0.60	$284.8	$2.37	$3.17	D
Barnstable (cont)		(4th-6th blocks)		200-300	0.52	300-400	0.43	400+	0.39				
Whitensville W.C.(Nrthbrdge)	4	17.40	S	0-10	1.74	10-150	1.32	150+	0.81	$244.8	$2.04	$2.73	D
Mass.-American (Millbury)	4	13.83	4	4-28.1	1.83	28.1-401.1	1.09	401.1+	0.62	$231.5	$1.93	$2.58	D
Hingham W.C. (Hingham+Hull)	4	16.59	7	7-12	1.90	12-22	1.71	22-42	1.56	$222.6	$1.86	$2.48	D
Hingham (cont)		(4th-6th blocks)		42-92	1.22	92-142	0.91	142+	0.60				
Oxford Water Company	4	25.70	8.4	8.4-25.1	1.44	25.1-41.8	1.21	41.8-58.5	1.04	$219.7	$1.83	$2.45	D
Oxford (cont)				58.5-158.8	0.77	158.8+	0.48						
Housantonic WaterWorks Great Barrington	4	20.00	10	10+	1.50					$199.7	$1.66	$2.22	F
Milford Water Company	2			All	1.62					$194.4	$1.62	$2.17	F
Southbridge Water Supply Co.	4	27.50	10	10-100	0.80	100-1,000	0.59	1,000+	0.52	$174.0	$1.45	$1.94	D
Granville Centre W.C.	4	25.00	10	10+	0.56					$144.9	$1.21	$1.61	F
Butterfield W.C. (Adams)	4	20.00	6.7	6.7+	0.56					$132.2	$1.10	$1.47	F
East Northfield W.C.(Nrthfld)	2	22.50	20	20-40	0.90	40-60	0.85	60-80	0.80	$110.0	$0.92	$1.23	D
East Northfield (cont.)			(4th block)	80+	0.75								

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TABLE A-3 -- WATER RATE STRUCTURES FOR PRIVATE COMPANIES WITHOUT METERING

Community	Service Fees	First Faucet	Add'tal Faucets	First Water Closet	Add'tal Water Closets	Bathtub-Shower	Add'tal Bathtubs-Showers	Outdoor Hose Sill Cocks	Per Head of Horse	Per Automobile	Washing Machine	Dish-Washer	Annual Residential Bill**	Price Per 100 cf	Price Per 1,000 gal
Westport Harbor (Seasonal) Fall River	$160.00												$160.00	$4.00	$5.35
Witches Brook W.C. Townsend	$300.00												$300.00	$2.50	$3.34
McNamara Water Service Dover	$175.00												$175.00	$1.46	$1.95
West Stockbridge W.C.		$52.00	$10.00	$24.00	$8.00	$20.00	$12.00				$10.00	$10.00	$158.00	$1.32	$1.76
Clough W.C. Dover	$155.00												$155.00	$1.29	$1.73
Westhampton W.C.	$105.40			$3.80	$3.80	$3.80			$1.00		$2.85		$119.65	$1.00	$1.33
Edgartown W.C.		$13.92	$13.92	$27.84	$13.92	$27.84	$13.92						$111.36	$0.93	$1.24
Hammond Acres (Seasonal) E. Longmeadow	$35.00												$35.00	$0.88	$1.17
Sheffield W.C.		$34.00	$7.00	$9.00	$7.00	$9.00		$21.00	$1.00				$96.00	$0.80	$1.07
Mankeenac Water Works Co. Stockbridge	$80.00												$80.00	$0.67	$0.89
Menemsha W.C. (Seasonal) Chilmark	$25.00												$25.00	$0.63	$0.84
South Egremont W.C.		$19.00	$7.00	$9.00	$7.00	$9.00	$7.00	$13.00	$2.50				$71.00	$0.59	$0.79
Monterey Water Company	$50.00			$5.00	$3.00				$1.00				$58.00	$0.48	$0.65
Hill Water Company Stockbridge		$10.00	$2.00	$5.00	$4.00	$5.00	$4.00	$6.00		$10.00			$49.00	$0.41	$0.55
Oakes Water Company Clarksburg	$48.00												$48.00	$0.40	$0.53
Gilchrist Spring Operators	$17.00			$4.00	$4.00	$4.00	$4.00						$29.00	$0.24	$0.32
Richmond															
Southfield Water Trust New Marlboro		$3.00	$3.00	$1.50	$0.75	$1.50	$0.75	$6.00	$1.00				$18.75	$0.16	$0.21

Assumption of 2 toilets, 3 faucets, 1 tub, 1 outdoor sill cock, and 1 washing machine per household. The Price Per 100 cf = Yearly Residential Bill divided by 120.

DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE B - SEWER RATES ORDERED FROM HIGHEST TO LOWEST PRICE

COMMUNITY	Billing Periods Per Year	Minimum Charge $	Allowance Per Billing (100cf)	First Sewer Rate Block Quantity (100cf)	First Sewer Rate Block Unit Price $ Per 100 cf	Second Sewer Rate Block Quantity (100cf)	Second Sewer Rate Block Unit Price Per 100cf $	DWR PRICING ANALYSIS Yearly Residential Bill ** (at 12,000 c.f. per year)	DWR PRICING ANALYSIS Average Price Per 100cf	DWR PRICING ANALYSIS Average Price Per 1,000 gal.
Concord	1	Only billed for 6 months		All	7.35			441.0	3.68	4.91
Ashland	2	25.00	16.0	16+	3.46			354.5	2.95	3.95
Reading	4			All	2.79			334.8	2.79	3.73
Barre		$300 yearly flat fee (system just starting)						300.0	2.50	3.34
Rutland	2			All	2.45			294.0	2.45	3.28
Nahant	2			All	2.40			288.0	2.40	3.21
Shelburne				All	2.24			268.8	2.24	2.99
Attleboro				All	2.00			240.0	2.00	2.67
Amesbury	2	32.90	19.0	19+	2.10			238.0	1.98	2.65
Belmont	4			All	1.90			228.0	1.90	2.54
Gloucester	2			All	1.86			222.6	1.86	2.48
Hadley	2			All	1.84			220.5	1.84	2.46
Marshfield		$220.20 yearly flat fee						220.2	1.84	2.45
Hatfield		$220 yearly flat fee						220.0	1.83	2.45
Falmouth				All	1.83			219.6	1.83	2.45
Holden				All	1.80			216.0	1.80	2.41
Revere	2			All	1.76			211.2	1.76	2.35
Williamstown	4			All	1.71			205.2	1.71	2.29
Mansfield				All	1.71			205.0	1.71	2.28
Wilmington	4			All	1.65			198.0	1.65	2.21
Stoneham	4			All	1.64			196.8	1.64	2.19
Winchester	2			All	1.62			194.4	1.62	2.17
Merrimac	2	52.00	26.7	26.7+	1.35			193.8	1.62	2.16
Marblehead	2			All	1.60			192.0	1.60	2.14

** Yearly residential bill for four person household based on 1,000 cf/month, or 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE B - SEWER RATES ORDERED FROM HIGHEST TO LOWEST PRICE

COMMUNITY	Billing Periods Per Year	Minimum Charge $	Allowance Per Billing (100cf)	First Sewer Rate Block Quantity (100cf)	First Sewer Rate Block Unit Price $ Per 100 cf	Second Sewer Rate Block Quantity (100cf)	Second Sewer Rate Block Unit Price Per 100cf $	DWR PRICING ANALYSIS Yearly Residential Bill ** (at 12,000 c.f. per year)	DWR PRICING ANALYSIS Average Price Per 100cf	DWR PRICING ANALYSIS Average Price Per 1,000 gal.
Stoughton	2			All	1.60			192.0	1.60	2.14
Uxbridge		160% of the Water Bill						192.0	1.60	2.14
Westwood	4			All	1.60			192.0	1.60	2.14
Belchertown		75% of the Water Bill						190.5	1.59	2.12
Medfield				All	1.58			189.0	1.58	2.11
Arlington	2			All	1.57			188.4	1.57	2.10
Wakefield	4			All	1.55			186.0	1.55	2.07
Chatham	4	24.00	10.0	10+	1.32			185.6	1.55	2.07
Bedford	2			0-25	0.90	25+	2.00	185.0	1.54	2.06
Danvers				All	1.54			184.8	1.54	2.06
Tewksbury				All	1.53			184.0	1.53	2.05
Winthrop		120% of the Water Bill						181.4	1.51	2.02
Stockbridge	2	37.00	M	All	1.50			180.0	1.50	2.01
Westborough	2	25.00	S	All	1.06			177.2	1.48	1.97
Malden	2	10.00	10.0	10-50	1.36	50-75	2.03 75+ = 2	169.4	1.41	1.89
Acushnet				All	1.40			168.0	1.40	1.87
Ayer	2			0-100	1.40	100+	1.55	168.0	1.40	1.87
Wellesley		126% of the Water Bill						166.3	1.39	1.85
Andover	2			All	1.38			165.6	1.38	1.84
Cambridge	2			All	1.37			164.4	1.37	1.83
Gardner				All	1.37			164.0	1.37	1.83
Milton	2	12.00	12.0	12+	1.45			163.2	1.36	1.82
Plainville				All	1.35			162.0	1.35	1.80
Rockland				All	1.35			162.0	1.35	1.80

** Yearly residential bill for four person household based on 1,000 cf/month, or 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE B - SEWER RATES ORDERED FROM HIGHEST TO LOWEST PRICE

COMMUNITY	Billing Periods Per Year	Minimum Charge $	Allowance Per Billing (100cf)	First Sewer Rate Block Quantity (100cf)	First Sewer Rate Block Unit Price $ Per 100 cf	Second Sewer Rate Block	DWR PRICING ANALYSIS Yearly Residential Bill ** (at 12,000	Average Price Per 100cf c.f. per year)	Average Price Per 1,000 gal.
Waltham	4			All	1.35		162.0	1.35	1.80
Medford	2			All	0.59	plus 120% "MWRA surcharge"	156.3	1.30	1.74
Groveland	2	35.00	M	All	1.30		156.0	1.30	1.74
Orange	4	7.50	5.0	5+	1.25		155.0	1.29	1.73
Natick	4			All	1.29		154.8	1.29	1.72
Salem	4	12.90	10.0	10+	1.29		154.8	1.29	1.72
Wilbraham	2			All	1.28		153.0	1.28	1.70
Watertown	2			All	1.27		152.0	1.27	1.69
Billerica	3			0-10	1.25	10+ 1.50	150.0	1.25	1.67
Braintree	4			All	1.25		150.0	1.25	1.67
Canton	3			All	1.25		150.0	1.25	1.67
Franklin	2			All	1.25		150.0	1.25	1.67
Northampton				All	1.25		150.0	1.25	1.67
Lowell	4	17.60	14.0	14+	1.24		149.8	1.25	1.67
Holbrook		$148 yearly flat fee					148.0	1.23	1.65
Hingham		$147.50 yearly flat fee					147.5	1.23	1.64
Boston		10 increasing rate blocks from $1.19 to $1.32 per 100 cf					144.0	1.20	1.60
Ipswich				All	1.20		144.0	1.20	1.60
Saugus	2			All	1.20		144.0	1.20	1.60
Framingham	3			All	1.15		138.0	1.15	1.54
Melrose	2			All	1.15		138.0	1.15	1.54
Chelsea	4			All	1.12		134.4	1.12	1.50
Newton	2	100% of the Water Bill					132.4	1.10	1.48
Marlborough	4			All	1.10		132.0	1.10	1.47

** Yearly residential bill for four person household based on 1,000 cf/month, or 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE B - SEWER RATES ORDERED FROM HIGHEST TO LOWEST PRICE

COMMUNITY	Billing Periods Per Year	Minimum Charge $	Allowance Per Billing (100cf)	First Sewer Rate Block Quantity (100cf)	First Sewer Rate Block Unit Price $ Per 100 cf	Second Sewer Rate Block Quantity (100cf)	Second Sewer Rate Block Unit Price Per 100cf $	DWR PRICING ANALYSIS Yearly Residential Bill ** (at 12,000	Average Price Per 100cf c.f. per year)	Average Price Per 1,000 gal.
Needham	2			All	1.10			132.0	1.10	1.47
Norwood	4			All	1.09			131.0	1.09	1.46
Lexington	2			All	1.08			129.6	1.08	1.44
Lynn	4			All	1.08			129.6	1.08	1.44
Walpole				All	1.06			127.2	1.06	1.42
Brookline	4			All	1.05			126.0	1.05	1.40
Foxborough		100% of the Water Bill						123.6	1.03	1.38
Brockton				All	1.00			120.0	1.00	1.34
East Longmeadow	2	15.00	S	All	0.75			120.0	1.00	1.34
Sturbridge	4	10.00	10.0	10+	1.00			120.0	1.00	1.34
Sunderland		$120 yearly flat fee						120.0	1.00	1.34
Taunton		$120 yearly flat fee						120.0	1.00	1.34
Peabody	4			All	0.98			117.6	0.98	1.31
Lenox				All	0.97			116.7	0.97	1.30
Fall River	2			All	0.96			115.2	0.96	1.28
Hardwick (Gibsvlle)		$113 yearly flat fee						113.0	0.94	1.26
Northfield		$110 yearly flat fee						110.0	0.92	1.23
Pittsfield		fee based on fixtures						110.0	0.92	1.23
Longmeadow				All	0.91			109.2	0.91	1.22
Amherst				All	0.90			108.0	0.90	1.20
Bellingham				All	0.90			107.7	0.90	1.20
Ware		70% of the Water Bill						105.0	0.88	1.17
Deerfield		$104 yearly flat fee						104.0	0.87	1.16
North Andover				All	0.85			102.0	0.85	1.14

** Yearly residential bill for four person household based on 1,000 cf/month, or 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations

DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE B - SEWER RATES ORDERED FROM HIGHEST TO LOWEST PRICE

COMMUNITY	Billing Periods Per Year	Minimum Charge $	Allowance Per Billing (100cf)	First Sewer Rate Block Quantity (100cf)	First Sewer Rate Block $ Per 100 cf	Second Sewer Rate Block Quantity (100cf)	Second Sewer Rate Block Unit Price Per 100cf $	DWR PRICING ANALYSIS Yearly Residential Bill ** (at 12,000 c.f. per year)	Average Price Per 100cf	Average Price Per 1,000 gal.
Weymouth		$102 yearly flat fee						102.0	0.85	1.14
Somerville	4			0-50	0.84	50-100	0.86 100+ =	100.8	0.84	1.12
Winchendon		60% of the Water Bill						100.2	0.84	1.12
Greenfield				All	0.82			98.4	0.82	1.10
Shrewsbury				All	0.82			98.4	0.82	1.10
Everett	4			All	0.80			96.0	0.80	1.07
Milford		$95 yearly flat fee						95.0	0.79	1.06
Cohasset	4	10.50	13.4	13.4+	0.79			94.6	0.79	1.05
Northborough	2			All	0.75			90.0	0.75	1.00
Lawrence	1	18.00	S	All	0.55			84.0	0.70	0.94
Scituate				All	0.70			84.0	0.70	0.94
Northbridge	2	28.40	40.0	40+	0.64			82.4	0.69	0.92
Springfield				All	0.66			79.2	0.66	0.88
Methuen	2	29.50	M	0-50	0.59	50-100	0.99 100+ =	78.8	0.66	0.88
Athol	2	13.00	20.0	20+	0.65			78.0	0.65	0.87
Worcester				All	0.64			76.8	0.64	0.86
Randolph		$76 yearly flat fee						76.0	0.63	0.85
South Hadley		$75 yearly flat fee						76.0	0.63	0.85
Monson		$75 yearly flat fee						75.0	0.63	0.84
Warren (W.)								75.0	0.63	0.84
Leominster	4			All	0.60			72.0	0.60	0.80
Blackstone		$70 yearly flat fee						70.0	0.58	0.78
Easthampton				All	0.58			69.6	0.58	0.78
Woburn		80 % of the Water Bill						68.0	0.57	0.76

** Yearly residential bill for four person household based on 1,000 cf/month, or 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE B - SEWER RATES ORDERED FROM HIGHEST TO LOWEST PRICE

COMMUNITY	Billing Periods Per Year	Minimum Charge $	Allowance Per Billing (100cf)	First Sewer Rate Block Quantity (100cf)	First Sewer Rate Block Unit Price $ Per 100 cf	Second Sewer Rate Block Quantity (100cf)	Second Sewer Rate Block Unit Price Per 100cf $	DWR PRICING ANALYSIS Yearly Residential Bill ** (at 12,000 c.f. per year)	DWR PRICING ANALYSIS Average Price Per 100cf	DWR PRICING ANALYSIS Average Price Per 1,000 gal.
Barnstable				All	0.53			63.6	0.53	0.71
Burlington		80% of the Water Bill						63.5	0.53	0.71
Plymouth	2	30.00	M	All	0.75			60.0	0.50	0.67
Westfield		$60 yearly flat fee						60.0	0.50	0.67
North Attleboro	2	19.50	40.0	40+	0.49			58.6	0.49	0.65
Southampton		$50 yearly flat fee						50.0	0.42	0.56
Auburn		$45 yearly flat fee						45.0	0.38	0.50
Clinton		75% of the Water Bill						38.7	0.32	0.43
West Springfield	2	10.00	20.0	20+	0.33			33.0	0.28	0.37
New Bedford				All	0.25			30.5	0.25	0.34
Adams		No user fees						0.0	0.00	0.00
Chicopee		No user fees						0.0	0.00	0.00
Dedham		No user fees						0.0	0.00	0.00
North Adams		No user fees						0.0	0.00	0.00
Quincy		No user fees						0.0	0.00	0.00
Somerset		No user fees						0.0	0.00	0.00
Swampscott		No user fees						0.0	0.00	0.00

DRAFT DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE C -- COMBINED WATER AND SEWER RATES AND YEARLY BILLS ORDERED FROM HIGHEST TO LOWEST COMBINED PRICE

	WATER			SEWER			TOTAL WATER and SEWER PRICES		
COMMUNITY	4 Person Household YEARLY Residential Price (at 12,000 c.f./ year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 Gal.	YEARLY Residential Price (at 12,000 c.f./year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 gal.	Yearly Residential Bill (at 12,000 c.f./year)	Average Price Per 100cf	Average Price per 1,000 Gal.
HIGH COMBINED WATER AND SEWER PRICE RANGE -- AVERAGE PRICE OVER $3.00 PER 100 C.F. (at 12,000 c.f./year)									
28 COMMUNITIES									
Reading	310.8	2.59	3.46	334.8	2.79	3.73	645.60	5.38	7.19
Ashland	274.8	2.29	3.06	354.5	2.95	3.95	629.30	5.24	7.01
Concord	162.0	1.35	1.80	441.0	3.68	4.91	603.00	5.03	6.72
Nahant	252.0	2.10	2.81	288.0	2.40	3.21	540.00	4.50	6.02
Amesbury	280.0	2.33	3.12	238.0	1.98	2.65	518.00	4.32	5.77
Westwood	311.8	2.60	3.47	190.0	1.58	2.12	501.84	4.18	5.59
Barre	180.0	1.50	2.01	300.0	2.50	3.34	480.00	4.00	5.35
Tewksbury	268.8	2.24	2.99	184.0	1.53	2.05	452.80	3.77	5.04
Belchertown	254.0	2.12	2.83	190.5	1.59	2.12	444.50	3.70	4.95
Rockland	274.0	2.28	3.05	162.0	1.35	1.80	436.00	3.63	4.86
Cohasset	336.0	2.80	3.74	94.6	0.79	1.05	430.55	3.59	4.80
Ipswich	273.6	2.28	3.05	144.0	1.20	1.60	417.60	3.48	4.65
Gloucester	194.8	1.62	2.17	222.6	1.86	2.48	417.40	3.48	4.65
Rutland	108.0	0.90	1.20	294.0	2.45	3.28	402.00	3.35	4.48
Danvers	214.8	1.79	2.39	184.8	1.54	2.06	399.60	3.33	4.45
Wilmington	198.0	1.65	2.21	198.0	1.65	2.21	396.00	3.30	4.41
Attleboro	156.0	1.30	1.74	240.0	2.00	2.67	396.00	3.30	4.41

** Yearly residential bill for 4 person household based on 1,000 cf/month, 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

DRAFT DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE C -- COMBINED WATER AND SEWER RATES AND YEARLY BILLS ORDERED FROM HIGHEST TO LOWEST COMBINED PRICE

	WATER			SEWER			TOTAL WATER and SEWER PRICES		
COMMUNITY	4 Person Household YEARLY Residential Price (at 12,000 c.f./ year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 Gal.	YEARLY Residential Price (at 12,000 c.f./year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 gal.	Yearly Residential Bill (at 12,000 c.f./year)	Average Price Per 100cf	Average Price per 1,000 Gal.
Marshfield	174.0	1.45	1.94	220.2	1.84	2.45	394.20	3.29	4.39
Belmont	157.2	1.31	1.75	228.0	1.90	2.54	385.20	3.21	4.29
Mansfield	180.0	1.50	2.01	205.0	1.71	2.28	385.00	3.21	4.29
Bedford	200.0	1.67	2.23	185.0	1.54	2.06	385.00	3.21	4.29
Holden	164.5	1.37	1.83	216.0	1.80	2.41	380.50	3.17	4.24
Williamstown	168.0	1.40	1.87	205.2	1.71	2.29	373.20	3.11	4.16
Hingham	222.6	1.86	2.48	147.5	1.23	1.64	370.10	3.08	4.12
Chatham	180.0	2.03	2.72	185.6	1.55	2.07	365.60	3.05	4.07
Andover	199.2	1.66	2.22	165.6	1.38	1.84	364.80	3.04	4.06
Falmouth	144.0	1.20	1.60	219.6	1.83	2.45	363.60	3.03	4.05
Winchester	168.0	1.40	1.87	194.4	1.62	2.17	362.40	3.02	4.04
Acushnet	192.0	1.60	2.14	168.0	1.40	1.87	360.00	3.00	4.01
MEDIUM COMBINED WATER AND SEWER PRICE RANGE -- BETWEEN $2.00 AND $3.00 PER 100 C.F. (at 12,000 c.f./year) 64 COMMUNITIES									
Merrimac	160.6	1.34	1.79	193.8	1.62	2.16	354.40	2.95	3.95
Shelburne	84.0	0.70	0.94	268.8	2.24	2.99	352.80	2.94	3.93
Arlington	164.4	1.37	1.83	188.4	1.57	2.10	352.80	2.94	3.93
Barnstable	284.8	2.37	3.17	63.6	0.53	0.71	348.40	2.90	3.88

** Yearly residential bill for 4 person household based on 1,000 cf/month, 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

DRAFT DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE C -- COMBINED WATER AND SEWER RATES AND YEARLY BILLS ORDERED FROM HIGHEST TO LOWEST COMBINED PRICE

	WATER			SEWER			TOTAL WATER and SEWER PRICES		
	4 Person Household								
COMMUNITY	YEARLY Residential Price (at 12,000 c.f./ year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 Gal.	YEARLY Residential Price (at 12,000 c.f./year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 gal.	Yearly Residential Bill (at 12,000 c.f./year)	Average Price Per 100cf	Average Price per 1,000 Gal.
Taunton	222.0	1.85	2.47	120.0	1.00	1.34	342.00	2.85	3.81
Stoneham	140.4	1.17	1.56	196.8	1.64	2.19	337.20	2.81	3.76
Marblehead	144.0	1.20	1.60	192.0	1.60	2.14	336.00	2.80	3.74
Groveland	177.6	1.48	1.98	156.0	1.30	1.74	333.60	2.78	3.72
Winthrop	151.2	1.26	1.68	181.4	1.51	2.02	332.60	2.77	3.71
Milton	168.0	1.40	1.87	163.2	1.36	1.82	331.20	2.76	3.69
Hatfield	105.0	0.88	1.17	220.0	1.83	2.45	325.00	2.71	3.62
Wakefield	138.0	1.15	1.54	186.0	1.55	2.07	324.00	2.70	3.61
Brookline	198.0	1.65	2.21	126.0	1.05	1.40	324.00	2.70	3.61
Stoughton	129.6	1.08	1.44	192.0	1.60	2.14	321.60	2.68	3.58
Lenox	198.0	1.65	2.21	116.7	0.97	1.30	314.70	2.62	3.51
Walpole	186.0	1.55	2.07	127.2	1.06	1.42	313.20	2.61	3.49
Uxbridge	120.0	1.00	1.34	192.0	1.60	2.14	312.00	2.60	3.48
Dedham	311.8	2.60	3.47	0.0	0.00	0.00	311.83	2.60	3.47
Hadley	90.0	0.75	1.00	220.5	1.84	2.46	310.50	2.59	3.46
Lynn	180.0	1.50	2.01	129.6	1.08	1.44	309.60	2.58	3.45
Canton	159.6	1.33	1.78	150.0	1.25	1.67	309.60	2.58	3.45
Orange	150.0	1.25	1.67	155.0	1.29	1.73	305.00	2.54	3.40
Stockbridge	120.0	1.00	1.34	180.0	1.50	2.01	300.00	2.50	3.34
Wellesley	132.0	1.10	1.47	166.3	1.39	1.85	298.30	2.49	3.32
Medford	140.4	1.17	1.56	156.3	1.30	1.74	296.70	2.47	3.31

** Yearly residential bill for 4 person household based on 1,000 cf/month, 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

DRAFT DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE C -- COMBINED WATER AND SEWER RATES AND YEARLY BILLS ORDERED FROM HIGHEST TO LOWEST COMBINED PRICE

	WATER			SEWER			TOTAL WATER and SEWER PRICES		
COMMUNITY	4 Person Household YEARLY Residential Price (at 12,000 c.f./ year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 Gal.	YEARLY Residential Price (at 12,000 c.f./year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 gal.	Yearly Residential Bill (at 12,000 c.f./year)	Average Price Per 100cf	Average Price per 1,000 Gal.
North Andover	192.8	1.61	2.15	102.0	0.85	1.14	294.80	2.46	3.28
Revere	80.4	0.67	0.90	211.2	1.76	2.35	291.60	2.43	3.25
Warren (W.)	216.5	1.80	2.41	75.0	0.63	0.84	291.50	2.43	3.25
Boston	146.9	1.22	1.64	144.0	1.20	1.60	290.90	2.42	3.24
Milford	194.4	1.62	2.17	95.0	0.79	1.06	289.40	2.41	3.22
Sturbridge	164.0	1.37	1.83	120.0	1.00	1.34	284.00	2.37	3.16
Amherst	175.6	1.46	1.96	108.0	0.90	1.20	283.60	2.36	3.16
Waltham	120.0	1.00	1.34	162.0	1.35	1.80	282.00	2.35	3.14
Brockton	162.0	1.35	1.80	120.0	1.00	1.34	282.00	2.35	3.14
Gardner	117.6	0.98	1.31	164.0	1.37	1.83	281.60	2.35	3.14
Salem	126.0	1.05	1.40	154.8	1.29	1.72	280.80	2.34	3.13
Medfield	90.0	0.75	1.00	189.0	1.58	2.11	279.00	2.33	3.11
Westborough	101.6	0.85	1.13	177.2	1.48	1.97	278.80	2.32	3.11
Holbrook	130.0	1.08	1.45	148.0	1.23	1.65	278.00	2.32	3.10
Malden	104.2	0.87	1.16	169.4	1.41	1.89	273.60	2.28	3.05
Chelsea	138.0	1.15	1.54	134.4	1.12	1.50	272.40	2.27	3.03
Lowell	121.0	1.01	1.35	149.8	1.25	1.67	270.80	2.26	3.02
Braintree	120.0	1.00	1.34	150.0	1.25	1.67	270.00	2.25	3.01
Watertown	115.3	0.96	1.28	152.0	1.27	1.69	267.30	2.23	2.98
Winchendon	167.0	1.39	1.86	100.2	0.84	1.12	267.20	2.23	2.98
Cambridge	102.0	0.85	1.14	164.4	1.37	1.83	266.40	2.22	2.97

** Yearly residential bill for 4 person household based on 1,000 cf/month, 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

DRAFT DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE C -- COMBINED WATER AND SEWER RATES AND YEARLY BILLS ORDERED FROM HIGHEST TO LOWEST COMBINED PRICE

	WATER			SEWER			TOTAL WATER and SEWER PRICES		
	4 Person Household								
COMMUNITY	YEARLY Residential Price (at 12,000 c.f./ year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 Gal.	YEARLY Residential Price (at 12,000 c.f./year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 gal.	Yearly Residential Bill (at 12,000 c.f./year)	Average Price Per 100cf	Average Price per 1,000 Gal.
Newton	132.4	1.10	1.48	132.4	1.10	1.48	264.80	2.21	2.95
Marlborough	132.0	1.10	1.47	132.0	1.10	1.47	264.00	2.20	2.94
Lawrence	180.0	1.50	2.01	84.0	0.70	0.94	264.00	2.20	2.94
Northfield	151.0	1.26	1.68	110.0	0.92	1.23	261.00	2.18	2.91
Franklin	108.0	0.90	1.20	150.0	1.25	1.67	258.00	2.15	2.87
Northbridge	175.2	1.46	1.95	82.4	0.69	0.92	257.60	2.15	2.87
Natick	100.8	0.84	1.12	154.8	1.29	1.72	255.60	2.13	2.85
Billerica	105.6	0.88	1.18	150.0	1.25	1.67	255.60	2.13	2.85
Ware	150.0	1.25	1.67	105.0	0.88	1.17	255.00	2.13	2.84
Ayer	84.0	0.70	0.94	168.0	1.40	1.87	252.00	2.10	2.81
Weymouth	146.4	1.22	1.63	102.0	0.85	1.14	248.40	2.07	2.77
Lexington	118.8	0.99	1.32	129.6	1.08	1.44	248.40	2.07	2.77
Foxborough	123.6	1.03	1.38	123.6	1.03	1.38	247.20	2.06	2.75
Framingham	108.0	0.90	1.20	138.0	1.15	1.54	246.00	2.05	2.74
Wilbraham	90.0	0.75	1.00	153.0	1.28	1.70	243.00	2.03	2.71
Norwood	111.6	0.93	1.24	131.0	1.09	1.46	242.60	2.02	2.70
Methuen	162.0	1.35	1.80	78.8	0.66	0.88	240.80	2.01	2.68
Saugus	96.0	0.80	1.07	144.0	1.20	1.60	240.00	2.00	2.67

LOWER COMBINED WATER AND SEWER PRICE RANGE -- BELOW $2.00 PER 100 C.F. (at 12,000 c.f./year)
44 COMMUNITIES

** Yearly residential bill for 4 person household based on 1,000 cf/month, 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

DRAFT DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE C -- COMBINED WATER AND SEWER RATES AND YEARLY BILLS ORDERED FROM HIGHEST TO LOWEST COMBINED PRICE

	WATER			SEWER			TOTAL WATER and SEWER PRICES		
COMMUNITY	4 Person Household YEARLY Residential Price (at 12,000 c.f./ year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 Gal.	YEARLY Residential Price (at 12,000 c.f./year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 gal.	Yearly Residential Bill (at 12,000 c.f./year)	Average Price Per 100cf	Average Price per 1,000 Gal.
Melrose	100.4	0.84	1.12	138.0	1.15	1.54	238.40	1.99	2.66
Somerville	133.2	1.11	1.48	100.8	0.84	1.12	234.00	1.95	2.61
Northampton	78.0	0.65	0.87	150.0	1.25	1.67	228.00	1.90	2.54
Longmeadow	117.6	0.98	1.31	109.2	0.91	1.22	226.80	1.89	2.53
Hardwick	110.6	0.92	1.23	113.0	0.94	1.26	223.60	1.86	2.49
Worcester	146.4	1.22	1.63	76.8	0.64	0.86	223.20	1.86	2.49
Needham	86.4	0.72	0.96	132.0	1.10	1.47	218.40	1.82	2.43
East Longmeadow	96.0	0.80	1.07	120.0	1.00	1.34	216.00	1.80	2.41
Bellingham	107.7	0.90	1.20	107.7	0.90	1.20	215.40	1.80	2.40
Peabody	97.2	0.81	1.08	117.6	0.98	1.31	214.80	1.79	2.39
Athol	136.0	1.13	1.52	78.0	0.65	0.87	214.00	1.78	2.38
Pittsfield	94.4	0.79	1.05	110.0	0.92	1.23	204.40	1.70	2.28
Scituate	120.0	1.00	1.34	84.0	0.70	0.94	204.00	1.70	2.27
Sunderland	81.0	0.68	0.90	120.0	1.00	1.34	201.00	1.68	2.24
Fall River	85.2	0.71	0.95	115.2	0.96	1.28	200.40	1.67	2.23
Plymouth	140.0	1.17	1.56	60.0	0.50	0.67	200.00	1.67	2.23
Randolph	120.0	1.00	1.34	76.0	0.63	0.85	196.00	1.63	2.18
Leominster	120.0	1.00	1.34	72.0	0.60	0.80	192.00	1.60	2.14
Everett	96.0	0.80	1.07	96.0	0.80	1.07	192.00	1.60	2.14

** Yearly residential bill for 4 person household based on 1,000 cf/month, 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

DRAFT DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE C -- COMBINED WATER AND SEWER RATES AND YEARLY BILLS ORDERED FROM HIGHEST TO LOWEST COMBINED PRICE

	WATER			SEWER			TOTAL WATER and SEWER PRICES		
COMMUNITY	4 Person Household YEARLY Residential Price (at 12,000 c.f./ year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 Gal.	YEARLY Residential Price (at 12,000 c.f./year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 gal.	Yearly Residential Bill (at 12,000 c.f./year)	Average Price Per 100cf	Average Price per 1,000 Gal.
Shrewsbury	92.2	0.77	1.03	98.4	0.82	1.10	190.60	1.59	2.12
Auburn	144.8	1.21	1.61	45.0	0.38	0.50	189.80	1.58	2.11
Greenfield	90.0	0.75	1.00	98.4	0.82	1.10	188.40	1.57	2.10
Northborough	90.0	0.75	1.00	90.0	0.75	1.00	180.00	1.50	2.01
Deerfield	67.2	0.56	0.75	104.0	0.87	1.16	171.20	1.43	1.91
Monson	86.3	0.72	0.96	75.0	0.63	0.84	161.30	1.34	1.80
Woburn	84.0	0.70	0.94	68.0	0.57	0.76	152.00	1.27	1.69
South Hadley	76.0	0.63	0.85	76.0	0.63	0.85	152.00	1.27	1.69
Swampscott	150.0	1.25	1.67	0.0	0.00	0.00	150.00	1.25	1.67
Southampton	100.0	0.83	1.11	50.0	0.42	0.56	150.00	1.25	1.67
Blackstone	79.9	0.67	0.89	70.0	0.58	0.78	149.90	1.25	1.67
Burlington	79.3	0.66	0.88	63.5	0.53	0.71	142.80	1.19	1.59
Westfield	80.0	0.67	0.89	60.0	0.50	0.67	140.00	1.17	1.56
Springfield	60.0	0.50	0.67	79.2	0.66	0.88	139.20	1.16	1.55
Adams	136.0	1.13	1.52	0.0	0.00	0.00	136.00	1.13	1.52
Quincy	124.8	1.04	1.39	0.0	0.00	0.00	124.80	1.04	1.39
Easthampton	55.2	0.46	0.61	69.6	0.58	0.78	124.80	1.04	1.39
New Bedford	92.3	0.77	1.03	30.5	0.25	0.34	122.80	1.02	1.37
West Springfield	76.0	0.63	0.85	33.0	0.28	0.37	109.00	0.91	1.21
North Attleboro	43.4	0.36	0.48	58.6	0.49	0.65	102.00	0.85	1.14
North Adams	94.4	0.79	1.05	0.0	0.00	0.00	94.40	0.79	1.05

** Yearly residential bill for 4 person household based on 1,000 cf/month, 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

DRAFT DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE C -- COMBINED WATER AND SEWER RATES AND YEARLY BILLS ORDERED FROM HIGHEST TO LOWEST COMBINED PRICE

	WATER			SEWER			TOTAL WATER and SEWER PRICES		
COMMUNITY	4 Person Household YEARLY Residential Price (at 12,000 c.f./ year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 Gal.	YEARLY Residential Price (at 12,000 c.f./year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 gal.	Yearly Residential Bill (at 12,000 c.f./year)	Average Price Per 100cf	Average Price per 1,000 Gal.
Clinton	51.6	0.43	0.57	38.7	0.32	0.43	90.30	0.75	1.01
Somerset	82.0	0.68	0.91	0.0	0.00	0.00	82.00	0.68	0.91
Chicopee	60.4	0.50	0.67	0.0	0.00	0.00	60.40	0.50	0.67

DRAFT DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1980

TABLE D -- ALPHABETIZED COMMONLTY WATER AND SEWER RATES AND YEARLY BILLS

	WATER ONLY			SEWER ONLY			TOTAL WATER and SEWER		
COMMUNITY	4 Person Household YEARLY Residential Price** (at 12,000 c.f./ year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 Gal. $	YEARLY Residential Price** (at 12,000 cf/year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 gal. $	Yearly Residential Price** (at 12,000 cf/year)	Average Price Per 100cf	Average Price Per 1,000 Gal. $
Acushnet	192.0	1.60	2.14	168.0	1.40	1.87	360.00	3.00	4.01
Adams	136.0	1.13	1.52	0.0	0.00	0.00	136.00	1.13	1.52
Amesbury	280.0	2.33	3.12	230.0	1.90	2.65	518.00	4.32	5.77
Amherst	175.6	1.46	1.96	100.0	0.90	1.20	283.60	2.36	3.16
Andover	199.2	1.66	2.22	165.6	1.30	1.84	364.80	3.04	4.06
Arlington	164.4	1.37	1.83	188.4	1.57	2.10	352.80	2.94	3.93
Ashland	274.8	2.29	3.06	354.5	2.95	3.95	629.30	5.24	7.01
Athol	136.0	1.13	1.52	78.0	0.65	0.87	214.00	1.78	2.38
Attleboro	156.0	1.30	1.74	240.0	2.00	2.67	396.00	3.30	4.41
Auburn	144.0	1.21	1.61	45.0	0.38	0.50	189.00	1.58	2.11
Ayer	84.0	0.70	0.94	168.0	1.40	1.87	252.00	2.10	2.81
Barnstable	284.0	2.37	3.17	63.6	0.53	0.71	348.40	2.90	3.88
Barre	180.0	1.50	2.01	300.0	2.50	3.34	480.00	4.00	5.35
Bedford	200.0	1.67	2.23	185.0	1.54	2.06	385.00	3.21	4.29
Belchertown	254.0	2.12	2.83	190.5	1.59	2.12	444.50	3.70	4.95
Bellingham	107.7	0.90	1.20	107.7	0.90	1.20	215.40	1.80	2.40
Belmont	157.2	1.31	1.75	228.0	1.90	2.54	385.20	3.21	4.29
Billerica	105.6	0.88	1.18	150.0	1.25	1.67	255.60	2.13	2.85
Blackstone	79.9	0.67	0.89	70.0	0.58	0.78	149.90	1.25	1.67
Boston	146.9	1.22	1.64	144.0	1.20	1.60	290.90	2.42	3.24
Braintree	120.0	1.00	1.34	150.0	1.25	1.67	270.00	2.25	3.01

** Yearly residential bill for 4 person household based on 1,000 cf/month, or 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

DRAFT DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE D -- ALPHABETIZED COMMUNITY WATER AND SEWER RATES AND YEARLY BILLS

	WATER ONLY			SEWER ONLY			TOTAL WATER and SEWER		
COMMUNITY	4 Person Household YEARLY Residential Price** (at 12,000 c.f./ year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 Gal. $	YEARLY Residential Price** (at 12,000 cf/year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 gal. $	Yearly Residential Price** (at 12,000 cf/year)	Average Price Per 100cf	Average Price Per 1,000 Gal. $
Brockton	162.0	1.35	1.80	120.0	1.00	1.34	282.00	2.35	3.14
Brookline	198.0	1.65	2.21	126.0	1.05	1.40	324.00	2.70	3.61
Burlington	79.3	0.66	0.88	63.5	0.53	0.71	142.80	1.19	1.59
Cambridge	102.0	0.85	1.14	164.4	1.37	1.83	266.40	2.22	2.97
Canton	159.6	1.33	1.78	150.0	1.25	1.67	309.60	2.58	3.45
Chatham	180.0	2.03	2.72	185.6	1.55	2.07	365.60	3.05	4.07
Chelsea	138.0	1.15	1.54	134.4	1.12	1.50	272.40	2.27	3.03
Chicopee	60.4	0.50	0.67	0.0	0.00	0.00	60.40	0.50	0.67
Clinton	51.6	0.43	0.57	38.7	0.32	0.43	90.30	0.75	1.01
Cohasset	336.0	2.80	3.74	94.6	0.79	1.05	430.55	3.59	4.80
Concord	162.0	1.35	1.80	441.0	3.68	4.91	603.00	5.03	6.72
Danvers	214.8	1.79	2.39	184.8	1.54	2.06	399.60	3.33	4.45
Dedham	311.8	2.60	3.47	0.0	0.00	0.00	311.83	2.60	3.47
Deerfield	67.2	0.56	0.75	104.0	0.87	1.16	171.20	1.43	1.91
East Longmeadow	96.0	0.80	1.07	120.0	1.00	1.34	216.00	1.80	2.41
Easthampton	55.2	0.46	0.61	69.6	0.58	0.78	124.80	1.04	1.39
Everett	96.0	0.80	1.07	96.0	0.80	1.07	192.00	1.60	2.14
Fall River	85.2	0.71	0.95	115.2	0.96	1.28	200.40	1.67	2.23
Falmouth	144.0	1.20	1.60	219.6	1.83	2.45	363.60	3.03	4.05
Foxborough	123.6	1.03	1.38	123.6	1.03	1.38	247.20	2.06	2.75
Framingham	108.0	0.90	1.20	138.0	1.15	1.54	246.00	2.05	2.74

** Yearly residential bill for 4 person household based on 1,000 cf/month, or 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

DRAFT DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE D -- ALPHABETIZED COMMUNITY WATER AND SEWER RATES AND YEARLY BILLS

	WATER ONLY			SEWER ONLY			TOTAL WATER and SEWER		
COMMUNITY	4 Person Household YEARLY Residential Price** (at 12,000 c.f./ year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 Gal. $	YEARLY Residential Price** (at 12,000 cf/year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 gal. $	Yearly Residential Price** (at 12,000 cf/year)	Average Price Per 100cf	Average Price Per 1,000 Gal. $
Franklin	108.0	0.90	1.20	150.0	1.25	1.67	258.00	2.15	2.87
Gardner	117.6	0.98	1.31	164.0	1.37	1.83	281.60	2.35	3.14
Gloucester	194.8	1.62	2.17	222.6	1.86	2.48	417.40	3.48	4.65
Greenfield	90.0	0.75	1.00	98.4	0.82	1.10	188.40	1.57	2.10
Groveland	177.6	1.48	1.98	156.0	1.30	1.74	333.60	2.78	3.72
Hadley	90.0	0.75	1.00	220.5	1.84	2.46	310.50	2.59	3.46
Hardwick (Gibvle)	110.6	0.92	1.23	113.0	0.94	1.26	223.60	1.86	2.49
Hatfield	105.0	0.88	1.17	220.0	1.83	2.45	325.00	2.71	3.62
Hingham	222.6	1.86	2.48	147.5	1.23	1.64	370.10	3.08	4.12
Holbrook	130.0	1.08	1.45	148.0	1.23	1.65	278.00	2.32	3.10
Holden	164.5	1.37	1.83	216.0	1.80	2.41	380.50	3.17	4.24
Ipswich	273.6	2.28	3.05	144.0	1.20	1.60	417.60	3.48	4.65
Lawrence	180.0	1.50	2.01	84.0	0.70	0.94	264.00	2.20	2.94
Lenox	198.0	1.65	2.21	116.7	0.97	1.30	314.70	2.62	3.51
Leominster	120.0	1.00	1.34	72.0	0.60	0.80	192.00	1.60	2.14
Lexington	118.8	0.99	1.32	129.6	1.08	1.44	248.40	2.07	2.77
Longmeadow	117.6	0.98	1.31	109.2	0.91	1.22	226.80	1.89	2.53
Lowell	121.0	1.01	1.35	149.8	1.25	1.67	270.80	2.26	3.02
Lynn	180.0	1.50	2.01	129.6	1.08	1.44	309.60	2.58	3.45
Malden	104.2	0.87	1.16	169.4	1.41	1.89	273.60	2.28	3.05
Mansfield	180.0	1.50	2.01	205.0	1.71	2.28	385.00	3.21	4.29

** Yearly residential bill for 4 person household based on 1,000 cf/month, or 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

DRAFT DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE D -- ALPHABETIZED COMMUNITY WATER AND SEWER RATES AND YEARLY BILLS

	WATER ONLY			SEWER ONLY			TOTAL WATER and SEWER		
COMMUNITY	4 Person Household YEARLY Residential Price** (at 12,000 c.f./ year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 Gal. $	YEARLY Residential Price** (at 12,000 cf/year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 gal. $	Yearly Residential Price** (at 12,000 cf/year)	Average Price Per 100cf	Average Price Per 1,000 Gal. $
Marblehead	144.0	1.20	1.60	192.0	1.60	2.14	336.00	2.80	3.74
Marlborough	132.0	1.10	1.47	132.0	1.10	1.47	264.00	2.20	2.94
Marshfield	174.0	1.45	1.94	220.2	1.84	2.45	394.20	3.29	4.39
Medfield	90.0	0.75	1.00	189.0	1.58	2.11	279.00	2.33	3.11
Medford	140.4	1.17	1.56	156.3	1.30	1.74	296.70	2.47	3.31
Melrose	100.4	0.84	1.12	138.0	1.15	1.54	238.40	1.99	2.66
Merrimac	160.6	1.34	1.79	193.8	1.62	2.16	354.40	2.95	3.95
Methuen	162.0	1.35	1.80	78.8	0.66	0.88	240.80	2.01	2.68
Milford	194.4	1.62	2.17	95.0	0.79	1.06	289.40	2.41	3.22
Milton	168.0	1.40	1.87	163.2	1.36	1.82	331.20	2.76	3.69
Monson	86.3	0.72	0.96	75.0	0.63	0.84	161.30	1.34	1.80
Nahant	252.0	2.10	2.81	288.0	2.40	3.21	540.00	4.50	6.02
Natick	100.8	0.84	1.12	154.8	1.29	1.72	255.60	2.13	2.85
Needham	86.4	0.72	0.96	132.0	1.10	1.47	218.40	1.82	2.43
New Bedford	92.3	0.77	1.03	30.5	0.25	0.34	122.80	1.02	1.37
Newton	132.4	1.10	1.48	132.4	1.10	1.48	264.80	2.21	2.95
North Adams	94.4	0.79	1.05	0.0	0.00	0.00	94.40	0.79	1.05
North Andover	192.8	1.61	2.15	102.0	0.85	1.14	294.80	2.46	3.28
North Attleboro	43.4	0.36	0.48	58.6	0.49	0.65	102.00	0.85	1.14
Northampton	78.0	0.65	0.87	150.0	1.25	1.67	228.00	1.90	2.54
Northborough	90.0	0.75	1.00	90.0	0.75	1.00	180.00	1.50	2.01

** Yearly residential bill for 4 person household based on 1,000 cf/month, or 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

DRAFT DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE D -- ALPHABETIZED COMMUNITY WATER AND SEWER RATES AND YEARLY BILLS

COMMUNITY	WATER ONLY 4 Person Household YEARLY Residential Price** (at 12,000 c.f./ year)	WATER ONLY AVERAGE Price Per 100cf	WATER ONLY AVERAGE Price Per 1,000 Gal. $	SEWER ONLY YEARLY Residential Price** (at 12,000 cf/year)	SEWER ONLY AVERAGE Price Per 100cf	SEWER ONLY AVERAGE Price Per 1,000 gal. $	TOTAL WATER and SEWER Yearly Residential Price** (at 12,000 cf/year)	TOTAL WATER and SEWER Average Price Per 100cf	TOTAL WATER and SEWER Average Price Per 1,000 Gal. $
Northbridge	175.2	1.46	1.95	82.4	0.69	0.92	257.60	2.15	2.87
Northfield	151.0	1.26	1.68	110.0	0.92	1.23	261.00	2.18	2.91
Norwood	111.6	0.93	1.24	131.0	1.09	1.46	242.60	2.02	2.70
Orange	150.0	1.25	1.67	155.0	1.29	1.73	305.00	2.54	3.40
Peabody	97.2	0.81	1.08	117.6	0.98	1.31	214.80	1.79	2.39
Pittsfield	94.4	0.79	1.05	110.0	0.92	1.23	204.40	1.70	2.28
Plymouth	140.0	1.17	1.56	60.0	0.50	0.67	200.00	1.67	2.23
Quincy	124.8	1.04	1.39	0.0	0.00	0.00	124.80	1.04	1.39
Randolph	120.0	1.00	1.34	76.0	0.63	0.85	196.00	1.63	2.18
Reading	310.8	2.59	3.46	334.8	2.79	3.73	645.60	5.38	7.19
Revere	80.4	0.67	0.90	211.2	1.76	2.35	291.60	2.43	3.25
Rockland	274.0	2.28	3.05	162.0	1.35	1.80	436.00	3.63	4.86
Rutland	108.0	0.90	1.20	294.0	2.45	3.28	402.00	3.35	4.48
Salem	126.0	1.05	1.40	154.8	1.29	1.72	280.80	2.34	3.13
Saugus	96.0	0.80	1.07	144.0	1.20	1.60	240.00	2.00	2.67
Scituate	120.0	1.00	1.34	84.0	0.70	0.94	204.00	1.70	2.27
Shelburne	84.0	0.70	0.94	268.8	2.24	2.99	352.80	2.94	3.93
Shrewsbury	92.2	0.77	1.03	98.4	0.82	1.10	190.60	1.59	2.12
Somerset	82.0	0.68	0.91	0.0	0.00	0.00	82.00	0.68	0.91
Somerville	133.2	1.11	1.48	100.8	0.84	1.12	234.00	1.95	2.61
South Hadley	76.0	0.63	0.85	76.0	0.63	0.85	152.00	1.27	1.69

** Yearly residential bill for 4 person household based on 1,000 cf/month, or 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

DRAFT DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE D -- ALPHABETIZED COMMUNITY WATER AND SEWER RATES AND YEARLY BILLS

	WATER ONLY			SEWER ONLY			TOTAL WATER and SEWER		
COMMUNITY	4 Person Household YEARLY Residential Price** (at 12,000 c.f./ year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 Gal. $	YEARLY Residential Price** (at 12,000 cf/year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 gal. $	Yearly Residential Price** (at 12,000 cf/year)	Average Price Per 100cf	Average Price Per 1,000 Gal. $
Southampton	100.0	0.83	1.11	50.0	0.42	0.56	150.00	1.25	1.67
Springfield	60.0	0.50	0.67	79.2	0.66	0.88	139.20	1.16	1.55
Stockbridge	120.0	1.00	1.34	180.0	1.50	2.01	300.00	2.50	3.34
Stoneham	140.4	1.17	1.56	196.8	1.64	2.19	337.20	2.81	3.76
Stoughton	129.6	1.08	1.44	192.0	1.60	2.14	321.60	2.68	3.58
Sturbridge	164.0	1.37	1.83	120.0	1.00	1.34	284.00	2.37	3.16
Sunderland	81.0	0.68	0.90	120.0	1.00	1.34	201.00	1.68	2.24
Swampscott	150.0	1.25	1.67	0.0	0.00	0.00	150.00	1.25	1.67
Taunton	222.0	1.85	2.47	120.0	1.00	1.34	342.00	2.85	3.81
Tewksbury	268.8	2.24	2.99	184.0	1.53	2.05	452.80	3.77	5.04
Uxbridge	120.0	1.00	1.34	192.0	1.60	2.14	312.00	2.60	3.48
Wakefield	138.0	1.15	1.54	186.0	1.55	2.07	324.00	2.70	3.61
Walpole	186.0	1.55	2.07	127.2	1.06	1.42	313.20	2.61	3.49
Waltham	120.0	1.00	1.34	162.0	1.35	1.80	282.00	2.35	3.14
Ware	150.0	1.25	1.67	105.0	0.88	1.17	255.00	2.13	2.84
Warren (W.)	216.5	1.80	2.41	75.0	0.63	0.84	291.50	2.43	3.25
Watertown	115.3	0.96	1.28	152.0	1.27	1.69	267.30	2.23	2.98
Wellesley	132.0	1.10	1.47	166.3	1.39	1.85	298.30	2.49	3.32
West Springfield	76.0	0.63	0.85	33.0	0.28	0.37	109.00	0.91	1.21
Westborough	101.6	0.85	1.13	177.2	1.48	1.97	278.80	2.32	3.11
Westfield	80.0	0.67	0.89	60.0	0.50	0.67	140.00	1.17	1.56

** Yearly residential bill for 4 person household based on 1,000 cf/month, or 12,000 cf/year. Actual prices paid will vary depending on seasonal use variations.

DRAFT DEM / DIVISION OF WATER RESOURCES STATEWIDE WATER AND SEWER RATES SURVEY - DECEMBER 1988

TABLE D -- ALPHABETIZED COMMUNITY WATER AND SEWER RATES AND YEARLY BILLS

	WATER ONLY			SEWER ONLY			TOTAL WATER and SEWER		
COMMUNITY	4 Person Household YEARLY Residential Price** (at 12,000 c.f./ year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 Gal. $	YEARLY Residential Price** (at 12,000 cf/year)	AVERAGE Price Per 100cf	AVERAGE Price Per 1,000 gal. $	Yearly Residential Price** (at 12,000 cf/year)	Average Price Per 100cf	Average Price Per 1,000 Gal. $
Westwood	311.8	2.60	3.47	190.0	1.58	2.12	501.84	4.18	5.59
Weymouth	146.4	1.22	1.63	102.0	0.85	1.14	248.40	2.07	2.77
Wilbraham	90.0	0.75	1.00	153.0	1.28	1.70	243.00	2.03	2.71
Williamstown	168.0	1.40	1.87	205.2	1.71	2.29	373.20	3.11	4.16
Wilmington	198.0	1.65	2.21	198.0	1.65	2.21	396.00	3.30	4.41
Winchendon	167.0	1.39	1.86	100.2	0.84	1.12	267.20	2.23	2.98
Winchester	168.0	1.40	1.87	194.4	1.62	2.17	362.40	3.02	4.04
Winthrop	151.2	1.26	1.68	181.4	1.51	2.02	332.60	2.77	3.71
Woburn	84.0	0.70	0.94	68.0	0.57	0.76	152.00	1.27	1.69
Worcester	146.4	1.22	1.63	76.8	0.64	0.86	223.20	1.86	2.49